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Among the contents of next week's issue (No. 174) will be the following articles:

Pinus Jeffreyi. (With illustration.)
Editorial.

How We Renewed an Old Place.—X.
By Mrs. J. H. Robbins.

New Orchids.
By R. A. Rolfe.

A New England Bog.
By F. H. Horsford.

The paper will contain an illustration of a Grove of Jeffrey's Pines, from a photograph.

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Village Woods.

ALMOST every week we hear that one or more of our thriving young cities have been enabled by some special legislation to acquire land to be used in the future as a public park. Very often it is the case that this land includes some picturesque glen through which a brook flows, or some old forest, or a lake-front or other natural feature of peculiar interest. This is all commendable, and there is no danger that too many parks will be made. Indeed, in almost every case which has come under our observation it is probable that the investment will pay a substantial money return in the improved value of property, without counting the still greater advantages which will come to the city of the future from the increased health and comfort and enjoyment of the citizens.

In smaller towns, too, there is usually some square or green which is utilized as a place of public assemblage, and which is bright with grass and flowers and attractive with the shade of venerable trees; but it rarely seems to occur to the inhabitants of smart villages that some public ground would be to them a most valuable possession. In many cases there is a neighboring grove to which the villagers resort for public gatherings. Of course, this is in private hands, but the people are welcome there when Fourth of July is to be celebrated or on such occasions as Sunday-school anniversaries, and farmers' picnics, and harvest-homes. We can call to mind several bits of woodland which serve a purpose like this, and which visitors always have in mind when they think of the villages near which they stand. But woods are never safe in private hands, and when the time comes, as it too often does, that the grove is felled for firewood or for lumber, the destruction of the trees is felt to be a distinct public loss.

This train of thought has been suggested by what has recently happened in a thriving village in northern New Jersey. Within a short walk of the town-hall a beautiful grove of hard-wood timber, some ten acres in extent, has stood as long as the oldest villager can remember. Through the kindness of successive owners it has been practically a public park for all, and in its shade have been held neighborhood gatherings of every sort for generations. It has been the haunt of the school-children, where spring flowers and autumn leaves were gathered. Visitors from the city have found in it a special attraction in a region which is in itself distinguished for rural beauty. In short, a great many people, when they think of the village, will think of this grove as one of its prime attractions. But the owner has been offered what he considers a fair price for the timber, and the grove is doomed. When the gray old trees fall the country-side will lose much of its beauty, and the village will be bereft of one of its most interesting features.

In such a case as this it seems plain that it would have been a public benefit if the grove could have been spared to the village. Of course, it is not every owner who can afford to give his property for the general good, but certainly the purchase of such a grove by the village would have been from every point of view a wise outlay of public money. Perhaps it would not have been difficult in this instance if any public-spirited citizen had taken the matter in hand to have raised sufficient money to save the grove, but in most states there is no way in which unincorporated towns can get possession of tracts of land for such purposes and hold them. In the state of New York there is a law which permits an association of citizens to hold land for public use and to appoint their own successors. Under this law landholders are encouraged to make donations of property to public use, and associations can be formed to buy such property where purchase-money is needed, and for this reason the action of the Legislatures of New York and Massachusetts, which makes such transfer of land possible, is to be commended.

But, in addition to laws for securing such village common-woods or public parks, there is also needed a more general feeling that they are worth having. Every one admits the advantages of securing some bits of rural scenery for the use of people in crowded cities. But people in villages are not shut out from the enjoyment of rural scenes. It is their privilege to see grass and trees, and to have familiar intercourse with natural objects, so that the commanding arguments for city parks do not apply to their condition. But, after all, the advantages of some common meeting-ground, for one purpose or another, are very obvious, and those villages which bestir themselves to save from destruction the groves or glens with which their names are associated will never repent of the labor and money expended in the cause. There is no question that such an acquirement of common property will pay in a broad way. It will give a stimulus to local pride and public spirit. It will strengthen the ties which attach the young people to their homes and to home interests. It will promote social feeling and neighborly kindness. It will add to the reputation of the village for enterprise and forethought and general enlightenment, and it will help to secure for the neighborhood that good name and fair fame which is to be as highly prized by a community as by individuals.

THE timber in the grove alluded to above has been sold to the owners of one of the portable saw-mills which are moved around from place to place in northern New Jersey and are making a market for the little collections of trees left standing upon the farms of that region. For many years these saw-mills have been helping to supply the market with hard-wood timber from Indiana, Ohio and that part of the country, but it is only of late years that they have invaded the east. In the aggregate they cut over an immense area of land, and as their proprietors are shrewd enough to combine for holding down the prices, the growing scarcity of timber is not felt in the market. These little supplies, gathered in from various sources, keep the market full, and this full market is constantly used as an argu-

ment against the assertions that are made by prudent men concerning the gradual destruction of the timber of the country.

If the trees on these scattered woodlands were allowed to grow up again the work of these portable mills would not be so much of a calamity, but, too often, when farmers find their trees cut away they endeavor to break up the land and add to the area of their cultivated fields. As a rule, too much land is already under the plow, and this new clearing simply means a few more acres of poorly tilled land and no increase of income. That is, the farm would generally yield a larger income if the wood had been allowed to stand, and if the labor and money put in the new ground had been expended upon that already under tillage. Indeed, in a great many instances it would be profitable for the farmers of the country to allow the broken, or sterile, or stony portions of their land to grow up in timber, and give more thorough culitvation to what remains. Where these mills have been operated for any considerable time one can see that the country loses much of its beauty, which is a more important matter than it seems, for a well-wooded country has attractions for city visitors and city buyers which enhance the value of real estate to an appreciable degree. But, besides this, it may be questioned whether the opening of the country to the sweep of the cold winds in winter, and drying winds in summer, does not have an appreciable effect on the general fertility of any region.

But, after all, these voracious little mills are only one other device used by this generation in its haste to get rid of its inherited forests. There is little reason to hope that any salable tree will be allowed to stand. The promise of future forests in the country seems to rest with the children, and depends upon their proper education. Who is to write the school-book which shall inspire our future citizens with an adequate appreciation of the value of forests as a natural resource, and of their functions in relation to soil and climate and health? Not the least of the benefits of early instruction of this sort would be its help toward establishing a personal friendliness for trees and toward the creation of a public sentiment which will protect them from wanton destruction at least.

Mr. John Robinson has begun, in the *Salem Gazette*, the publication of a series of articles on "Our Trees." From the first of these papers it appears that there are about 125 different trees growing naturally or cultivated in and about Salem. Of these sixty-four are natives of eastern Massachusetts and seventeen come from the other parts of the United States. Salem is, therefore, a very good centre from which to study trees, and Mr. Robinson's papers cannot fail to stimulate much interest in the subject. In the introductory article Mr. Robinson calls attention to the fact, which has often been insisted on in these columns, that people who are familiar with humbler plants, and this applies, too, to learned botanists, have a very slight acquaintance with trees. "Nearly every one," he remarks, "can tell an Elm from an Oak or a Willow from a Pine, but the difficulty seems to be in telling the Oaks and Pines apart, to distinguish the Pines from the Spruces or the Birches from the Hornbeams, or separate the many foreign trees in cultivation from the native species." "And a little observation," he tells us, "will serve to fix nearly all of these trees in mind and add much pleasure to town walks and country rambles. When a good example of some tree is found it should be carefully watched from the earliest warming up of its blood, so to speak, by the spring sun through all its various phases of bursting buds, flowers and fruit, and falling of its leaves. Methods in observation are thus acquired which can be applied to other things in life. By this out-of-door study much more satisfactory results will be obtained than by merely trusting to match flowers or fruit to description and figures. Although books are valuable aids, Nature never will confine herself to plates, which must be typical rather than universal in their scope."

A sunset, a forest, a snow-storm, a certain river-view, are more to me than many friends, and do ordinarily divide my day with my books.—*Emerson.*

Winter Studies of the Pine Barren Flora of Lake Michigan.—V.

THE greater part of the woody growth found in a Pine Barren will naturally be sought among the evergreens. Five kinds of these are present, making, with the Larch, six species of conifers. These are closely associated with deciduous trees, or have been supplanted by them, for many of the Pines and Cedars have been destroyed by fire, and Oaks and Poplars have taken their place. But when protected a new growth of Pine is made, the White Pine or the Gray Pine, according to locality and conditions of the soil. Protection is difficult in a region traversed by several railroads, and must be restricted to quite limited areas. Hence, some of the problems of forestry may be advantageously studied in a section of country no larger than the one which embraces the wild lands at the head of Lake Michigan, where the trees have to struggle with the carelessness and wastefulness of men. Groves of White Pine are sometimes seen where the ground is well stocked with thrifty trees of recent growth, from ten to thirty feet high. They have sprung up in the track of fires and maintained their place, and, if not interfered with, would in time form trunks of fair dimensions. The natural conditions are present for a Pine-forest from two to four miles wide, extending from the boundary of Indiana, eastward, into the state of Michigan. Most of this is now waste land, of little use for any produce that may be obtained from it. Once there were saw-mills in the tract cutting up Pines and Whitewood (Liriodendron), found in paying quantities.

Taking the coniferæ according to their abundance, the list is headed by *Pinus Banksiana*, the Gray Pine, or Jack Pine, as it is generally called at the west. It is limited to the close vicinity of the lake, a strip of land from half a mile to two miles wide embracing about all of it. An essentially pure wood of this species is found only on a narrow strip along the shore, where scarcely any trees except a few Red and White Cedars are mixed with it. The succession of woody plants is about as follows: Next to the beach is a fringe of Necklace Poplars (*Populus monilifera*), mostly stunted trees, often bearing fruit when only eight or ten feet high. Interspersed with these are Willows and Rose-bushes, Cornels, Grape-vines and the Sand Cherry (*Prunus pumila*). Then the Gray Pine comes in, dwarfed, and often shrub-like where much exposed, but forming trees with trunks six inches to a foot and a half through when away from the shore. Though it is usually a homely tree when standing alone, groves of it, where the ground is free from underbrush and covered with an abundance of fallen leaves or with a sparse herbaceous vegetation, possess attractive features.

Flattish reaches of this Pine convert the nearly barren sands into clean shady woods, almost equaling woods of Red Pine. They do not have the straight columnar trunk of this tree, covered with smooth reddish bark, the limbs high up and forming a close canopy, with thin, long and slender needles in brush-like tufts, but a short trunk with dark-colored, rough and flaky bark, the limbs low down and the branchlets studded on all sides with short, stiff, yellowish green leaves. They are most shapely when somewhat crowded, being spire-shaped when young and small, and when well grown making a roundish crown with their spreading limbs. As a shade-tree along a sandy road, they do well and may be quite shapely. Dr. Richardson considered Bank's Pine a handsome tree when growing in favorable situations.* Isolated upon the sand-hills, where it is buffeted by the winds, it may be only a straggling shrub or scraggy tree, standing firm till the sand is swept from off its roots and it is undermined and toppled over. Even in such localities it is frequently a picturesque object, winning respect for its sturdiness, though not admiration for its shape.

The Gray Pine in this section varies in height from a shrub, fruiting when but two or three feet above the ground, to a tree sixty feet high. Trees thirty or forty feet high are common in the denser woods away from the shore of the lake. I have measured some that had a girth of sixty inches, and those with a diameter of ten to twelve inches are frequent. The trunk varies but little in size up to the first branches when these are low, and scarcely any portion of the roots is visible above the surface of the ground, from which the tree rises like a post. It may be found producing cones when but half an inch in diameter at the ground and four feet high, bearing a few short branches at the top. But the trees are usually much more stocky than this when fruiting.

The crown of this tree is generally disfigured by the dark-

* Gordon, "The Pinetum," p. 231.

colored cones adhering to the branches. They are very persistent, and last for many years. It is doubtful whether they fall off naturally, though they may be broken from the limbs or drop off when the attachment rots away. They are more durable than the smaller branches to which they cling, for on fallen trees that have lain upon the ground a long time the cones remain till the branchlets decay, the thick and indurated scales being more lasting than the wood. They are closely sessile, and when a fresh cone is pulled off some of the wood of the supporting branch invariably comes away with it, a piece from half an inch to more than an inch in length, and often reaching to the centre of a small twig in depth, being torn out. No better proof of the growth of a flower-cluster from the wood could be desired. Even the old and dry cones do this to a less degree, or the branch breaks off before the cone can be detached. This persistence of the cones gives to an old tree the appearance of great fruitfulness, the fruit of many years being represented on it, though comparatively few cones are produced in any single year, the fresh ones often being quite scattered, or even scarce, upon the limbs. Hundreds of these old cones may be counted on a dead tree, the limbs being almost black with them, or they may look gray or grayish from the cones weathering on their exposed parts to the color of the nest of a paper-wasp. The old cones usually point downward from the limbs, and become top-shaped by the spreading of the scales, their diameter nearly equaling their depth, an inch or more across.

The newly ripened cones are from one to two inches long, conical, but usually a little curved at the end. They are of a light or yellowish brown color. The scales are thick and blunt, reddish brown within when they first open. Each ends in an oblique, somewhat four-sided, or rhomboidal plate. In the centre of the plate is a shallow pit, or eye, of a grayish color, from which many fine lines radiate to the margins. There is enough variety in their colors and markings to impart a fair degree of prettiness to them at this time. As they are often in pairs, and on opposite sides of a branch, pointing in the same direction as the branch, they have the appearance of stumpy horns scattered among the leaves.

Rudimentary cones are seen upon the branches in the winter, as they form the preceding season. These are from a fourth to a half inch in length and ellipsoidal in shape. Like the winter-buds, they are often coated with resin, which exudes freely whenever the wood is cut, and is also copious at the base of the twigs and branchlets. At these points it forms balls frequently half an inch in diameter, completely investing the branches. The resin is formed in connection with the persistent remnants of bud-scabs, encircling the twigs at their insertion, and hence accumulates there in balls. There are also seen upon the branches clusters of withered aments, which, though the tree sheds its pollen in May and June, remain till the following spring.

The seeds of the Gray Pine are small and dark-colored, with a relatively large pale-brown wing, so thin as to be transparent. Hence it is very light and may be carried far by the wind. The wing, shaped almost exactly like that of some insect, is striped along its inner edge with lines of darker brown. The seeds usually occur in pairs, and are eagerly sought for food by the White-bellied Nuthatch (*Sitta Carolinensis*). Small flocks of these birds, which become gregarious in winter, are seen flying about among the trees, searching the cones for seeds or pulling off bits of the bark under which insects or larvæ may be hidden. Their long and flattened bill is nicely fitted for this work, for the seed lies close to the scale, but the wing, dexterously snipped off and dropped, as it comes floating on the air, shows that they readily succeed in their efforts.

The position of the cones upon the branches is rather upright, which tends to keep the seeds from falling out. Though the cones mature in the fall they are slow to open, and continue to open throughout the winter, some being closed even up to spring. This prolongs the season of supply for these birds, which are quite abundant, and among the few to stay with us and make the woods more cheerful in the winter. The Gray Pine takes a wide range in its conditions of growth. Naturally a denizen of rocky ground and dry sands, it is not uncommon here in the wetter grounds. I have taken it from the scanty soil lodged in the fissures of rocks in Canada, and found it here in sphagnous swamps, growing amid clumps of Cassandra, with the Pitcher-plant at its base, its roots covered with Sphagnum and Cranberry Vines. In such wet positions it is short-lived, though it may grow to a shapely little tree, three or four inches in diameter. But in some swamps less wet it takes a place beside the Tamaracks, like this tree tall and slender when the growth is crowded, with a clean trunk devoid of limbs till near the top. Groups of such trees under these conditions are rather neat and attractive, in the winter the yellowish-green of the Pine offsetting the dense, rough spray of the Tamarack; in the summer mottling its soft foliage of lively green with a well-contrasted color.

Englewood, Chicago. *E. J. Hill.*

How We Renewed an Old Place.

IX.—PLANTING TREES ON A LAWN.

THE house at Overlea was begun in the summer of 1887, and completed in April, 1888, at which time the grading of the knoll was finished, and the lawn ready for planting and sowing.

Our first experiment, however, in moving good-sized trees was made in the month of January of the latter year, when we transplanted two large Norway Maples, given to us by a friend, on condition that we would take them away at that time, as otherwise they would be destroyed by some grading that was going on where they stood.

Fortunately, it was an open winter, with no frost in the ground, and there was no difficulty about digging. I personally conducted the procession, and insisted upon having the diggers begin at the outside and work in toward the trunk, so as to save all the little roots. It was slow and careful work, and it took all day to move two trees. They were too heavy to lift with a ball of earth, as we had no special appliances for the purpose, for the largest one measured six inches through, two feet from the ground, and had a lofty top.

After the trees were carefully uprooted their tops were cut off, until the main stems were only about eight feet high, and the branches that were left running up from them were also cut back to within a few feet of their union with the trunk. Could we have foreseen the mildness of the two succeeding winters we should have been tempted to prune them less severely. I am almost sure that it was unnecessary, but moving them at such an unusual season seemed to make it wise to give them more root than top. It will take about four years for them to get back their original stature after this severe treatment, but they perhaps have escaped risks of drawbacks by the way. Similar trees in this town, transplanted without topping, though they have lived, have shown signs of feebleness, and I am disposed to think that in the end ours will make the finer specimens.

The holes in which they were set were dug six feet in diameter and nearly five feet deep, and six or seven cart-loads of loam were put in them. A gentle rain was falling when the Maples were set; and when the roots were fairly covered and the ground trodden closely about them, water was put into the holes before they were finally filled up.

These two trees, planted on the south side of a gravelly slope, so that the moisture must run away from their roots more than is desirable, have made so heavy a growth in the last two years, that in the middle of summer we have been compelled to cut out many large branches to admit light, and to improve their shape. In addition to their density of growth, they have shot up fresh stems, between seven and eight feet long, in the two seasons they have been fairly growing, for the first summer they did not accomplish much beyond a good crop of leaves. By the end of July we look to see them grow four or five feet more, as they are fairly set, and in fine healthy condition. The ground about them has been kept open and cultivated, and is heavily enriched several times in the course of the summer.

They are so near the house that we use the broad space around them as beds for Geraniums and Heliotropes, which probably detracts a little from the growth of the trees, but at the same time improves their appearance and keeps the earth moist and well stirred up about their roots. When the season is dry they are very thoroughly watered at least twice a week, by leaving the hose to run on them from its open mouth for an hour or two at a time.

In April we moved in the same manner a Silver Maple, which has grown nine feet and ten inches, and a stocky White Willow, which has been put quite near the house to give us immediate shade, of which we are greatly in need, and which is to be cut down as soon as the Maples are big enough. This last tree has grown, in a very dry place, a dense head nine feet six inches in height, so that it is now a tree seventeen feet high.

These are the best we have to show, except a Catalpa, which has made a most luxuriant growth, for our Ash-leaved Maple, which was also disposed to make a record, has been moved twice, and so set back. But this growth on a gravel-bank,

where no one thought that trees could be made to live at all, is not to be despised. Some of the other trees have grown almost equally well, but were not so large to begin with, so they seem less important.

In that same April the generous friend who furnished us with the large Willow and Silver Maple, kindly sent us, in addition, a dozen moderate-sized trees which he was disposed to think would grow faster than the larger ones, and these were placed somewhat at random on the lawn, for they came unexpectedly, and had to be set without much reflection, so that some of them have had to be moved again.

And here we will honestly admit that the landscape-gardener would have been of great use to us, for the lack of experience gives one a feeling of uncertainty about the result of even his best-considered arrangement, which is often disquieting.

We know for one thing that we have too many trees too near together, because we never dreamed they would all make up their minds to live, and we discover that after taking great pains to make a tree grow, we cannot make up our minds to disturb it for fear it will be in the way in the future, and so we postpone the evil day. Possibly they will do better in their wind-swept situation for not being widely separated, and for the next generation, which will be unrestrained by our sentiments, we have provided some small Elms that ought to be good trees by the time the short-lived Maples are beginning to shuffle off their mortal coil. We know that the least enduring of them will outlive us, unless we emulate old Parr and the Countess of Desmond,

> Who lived to the age of a hundred and ten,
> And died by a fall from an Apple-tree then.

All we ask is that they will hurry to shelter us from the burning afternoon sun, to which our front is exposed, and when their task is done, the noble Elms, which are "a hundred years growing, a hundred years standing, a hundred years dying," shall be our monument when this house, like its ancient predecessor, shall have crumbled to ruin.

Impatient as we are to achieve miracles of growth, we might forget how much our little trees are doing were it not for a photograph taken in 1888, which shows them scudding under bare poles, that makes their present height quite imposing by contrast.

In the five years which we claimed of our critics in the beginning, we are now sure that all air of newness will have gone from the knoll, which, even the second summer, astonished the passers-by, who were most of them unused to the results that can be attained by unremitting exertions.

Against these trees we have no charges to make of either stubbornness or ingratitude; given the conditions, the results are all, and more than all, we had a right to expect. The only ones that have not been what we could wish are the Hemlocks, which object strenuously to the dry, windy situation, and only live under protest. In vain do we plant nursery trees with good roots, they dwindle and pine, and refuse to profit by their advantages. If Garden and Forest will give us any advice about treating them, we will gladly follow it. Out of over forty trees planted on the lawn and its slopes, they are the only ones that fail to give satisfaction, and we desire to get the better of them if possible.

No evergreen is so graceful and suggestive of wild woodland ways as this feathery denizen of the forest, that seems to shrink from the companionship of man. The perfume of its boughs reminds one of camps in the woods, of canoes, of Indian guides, and silent solitudes. For me it has ever a peculiar and elusive charm, and I cannot come in my wanderings upon some majestic old tree beside a granite boulder, as it loves to grow, without a thrill compounded of association and admiration. The Hemlock seems to possess every beauty that a tree can have: its form, whether it be symmetrical with youth, or gnarled and twisted by age, is always impressive and noble; the murmur of its boughs is tenderly musical, its fragrance exquisitely wild and aromatic; its very shyness has a charm that seems to breathe distinction, and, best of all, it is perennially green, so that its blue shadows on the snow give one of the loveliest tones in a winter landscape.

Why, then, since I woo it with such tender affection, such anxious care, does it refuse to grow for me? Possibly it is killed with kindness, and some wholesome neglect may be what its shy soul desires, for I notice that the little ones in the swale, half-smothered in grass, do not die, though left wholly to their own wayward devices, while the pampered specimens on the lawn lift bare and ragged branches to the sky, from out their luxurious beds of mulching, and are painfully disappointing and uncertain.

Hingham, Mass. *M. C. Robbins.*

Weevils in Leguminous Tree-seeds.

THE beetles known as weevils, belonging to the genus Bruchus, are known to live during their early stages in the seed of various plants, especially those of the *Leguminosæ* or Pea family. The Pea and the Bean-weevils are examples too well known to gardeners, grain-growers and dealers.

While many species of weevils attack the seeds of plants which are not at present of great economic value, their ravages in the seed of leguminous trees and shrubs in various regions must often be very considerable. Some of the arid, as well as the more fertile, parts of our south-western states and territories and of Mexico are characterized by several genera and species of leguminous trees, which comprise the principal arborescent vegetation over large areas. Aside from the uses to which the wood is put, the fruit of these trees is sometimes of much value to the native inhabitants of the region. This fruit is often seriously infested by weevils of several species, four of which Mr. C. E. Faxon has drawn for the accompanying illustration, together with several of the pods infested.

An idea of the abundance of these pests may be derived from the fact that out of hundreds of seeds Mr. Faxon sometimes found difficulty in getting a perfect one and its embryo for illustration in the "Silva of North America."

A better knowledge of the weevils affecting these trees will probably show other species besides those already known.

Although each is usually confined to one kind of food-plant, the same species of weevil sometimes attacks the fruit of leguminous trees belonging to different genera. These insects undergo all their transformations within the fruit, and, when mature, the beetles cut small round holes in the seed, or through seed and pod, and make their escape.

The pods and seeds of the screw bean (*Prosopis pubescens*) are ground into a sort of flour and used as food by the natives of Arizona and New Mexico. These pods often contain great numbers of the little grubs, which afterward develop into the small weevil named *Bruchus desertorum*,* or the Bruchus of the desert.

The color of this is ashy-red above and gray beneath. The wing-covers are splashed and dotted with yellowish red or darker markings, which vary extremely in different individuals, being almost entirely absent in some. It is about one-tenth of an inch long.

Perhaps, the presence of large numbers of these insects in the screw bean gives it an added richness and flavor when ground and cooked. The screw bean is also said to be infested by *Bruchus uniformis*, a large, ashy-reddish colored species much like the next.

The Mesquit (*Prosopis juliflora*), often a most characteristic tree of arid areas in Arizona and Mexico, has its pods infested by *Bruchus prosopis*, a grayish brown species, with dark markings above, and about a sixth of an inch long. The fruit of this plant, known also as *Prosopis* or *Algarobia glandulosa*, is eaten by Indians, and even by white men, but is chiefly valuable as food for horses, which eat both beans and pods.

From fruit of *Cercidium Torreyanum*, sent to the herbarium of the Arboretum, four quite different-looking species of weevils have been taken. *Bruchus amicus* came out of seed received from Texas. It is among the largest of the American species of the genus, sometimes measuring a fifth of an inch in length. This beetle is densely covered with a silky gray pubescence, which, when rubbed off, leaves the surface smooth and black, or reddish black. Seed of the same plant collected in Arizona was found to be infested by *Bruchus pruininus* and by great numbers of *B. limbatus*.

The first of these two is black, but is so covered by a fine silky pubescence that it has a bluish gray appearance. It is about two-thirds as large as *B. amicus*, to which it has some resemblance. It is said to occur on the "Ironwood-tree" of Arizona, which may mean the *Olneya Tesota*, but I have not yet found it in seed of this tree.

Bruchus limbatus is a small, stout, black species, with a broad red stripe on each wing-cover. This red stripe is variable in shape in different individuals, and it is usually more or less constricted in the middle. Large specimens are about one-eighth of an inch in length. A package of the beans of *Acacia Greggii*, sent from Arizona, proved to be utterly ruined by these beetles. Not a bean contained less than half a dozen of the insects, while twelve or fifteen was a common number, and each emerged by a separate hole.

* Technical descriptions and references to original descriptions will be found in a paper entitled, "A Revision of the *Bruchidæ* of the U. S.," by G. H. Horn, M.D. *Transactions of the American Entomological Society*, Philadelphia: vol. iv., pp. 311–342.

It may be of interest to note that this package of seed, containing thousands of weevils, had a distinctly warm feeling, a fact which has recently been brought to notice in regard to weevil-infested peas and cultivated beans.

The fourth species of weevil which came out of pods of *Cercidium Torreyanum* was *Bruchus Ulkei*, a beetle quite as large as *B. amicus* and densely covered with a whitish pubescence, except the outer half of each wing-cover, which is black.

extracted from the flowers, and it may be worth noting that the pods sent to Dr. Hagen were represented as being exceedingly rich in tannin.

Species of weevils also infest the seed of Gleditschia, Robinia, Cercis, Leucæna and other American leguminous trees; and the larva of a large Tineid moth has been found to live in pods and seed of Leucæna and Cercidium from Texas.

Arnold Arboretum. *J. G. Jack.*

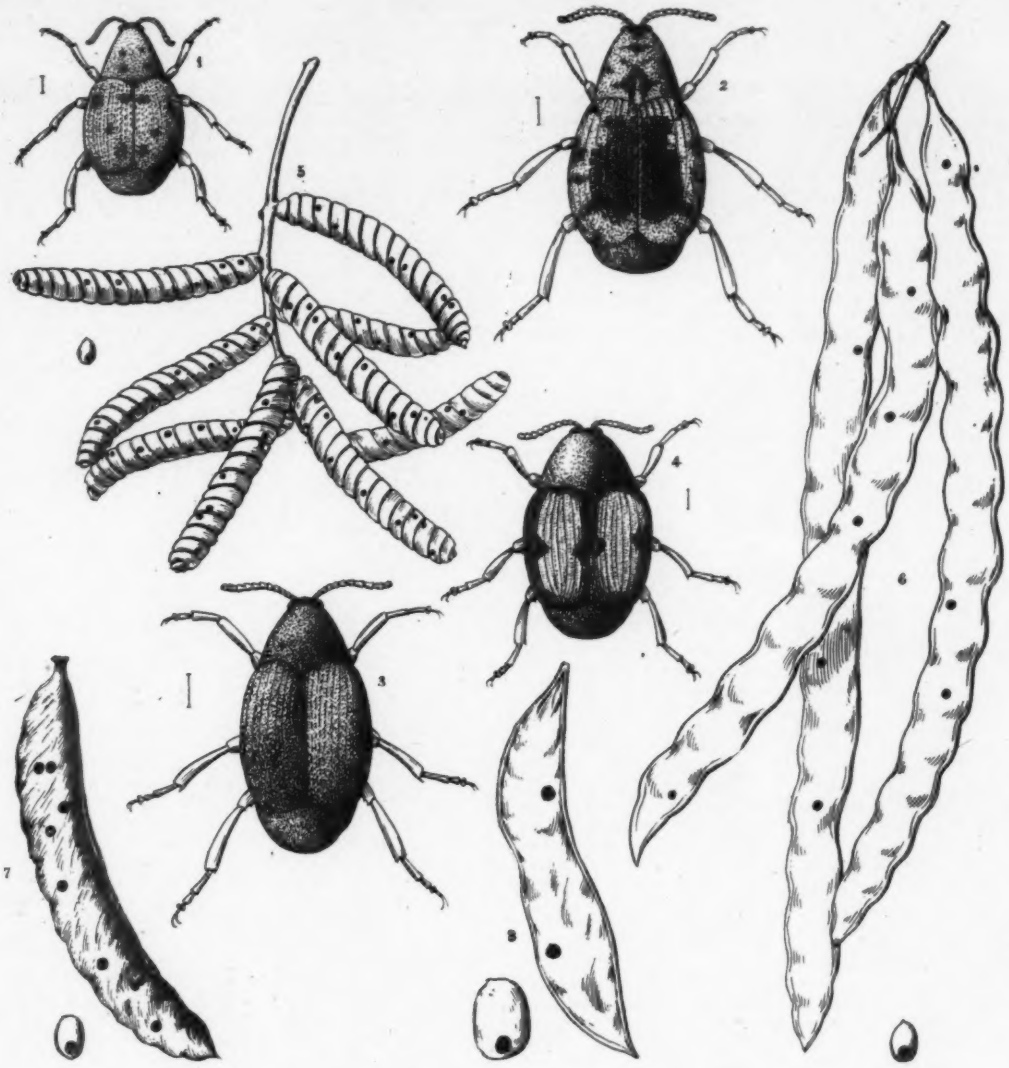

Fig. 49.—WEEVILS FOUND IN LEGUMINOUS TREE-SEEDS.—See page 280.

1. *Bruchus desertorum*. 2. *B. prosopis*. 3. *B. amicus*. 4. *B. limbatus*. 5. Pod of *Prosopis pubescens*. 6. Pod of *P. juliflora*. 7. Pod of *Acacia Farnesiana*. 8. Pod of *Cercidium Torreyanum*.

Dr. H. A. Hagen, of the Museum of Comparative Zoölogy at Cambridge, Massachusetts, has for many years had several of the foregoing species of beetles and specimens of their work in his biological collection. These were principally collected by Dr. G. Engelmann, Dr. E. Palmer and Professor F. W. Putnam in their various collecting and exploring expeditions.

In this biological collection there are pods of *Acacia Farnesiana*, which were received from Mexico and found to be much infested by *Bruchus protractus*, a weevil resembling *B. prosopis*, but rather more slender in shape and darker in color and with heavier markings on the wing-covers. *B. amicus* also came out of these pods.

Acacia Farnesiana is now naturalized in nearly all the tropical countries of the globe. It is well known that a perfume is

Foreign Correspondence.

The Temple Show.

THE fourth great plant exhibition held in the gardens of the Inner Temple, by the Royal Horticultural Society, on the twenty-eighth and twenty-ninth of May, eclipsed everything of the kind seen here before. There may have been larger exhibitions than this, and it is possible that some departments of horticulture may have been better represented at the famous shows held by this society thirty or more years ago than they were yesterday, but, taken as a whole, the verdict of all qualified judges is, that English horticulture had never before achieved anything like this Temple show. The chief attractions were supposed to be Orchids and Roses, and

these were indeed magnificently represented. But quite as much may be said of the herbaceous and alpine plants, the Ferns, Calceolarias, Begonias, Heaths, and the many other popular flowering plants, both tender and hardy, all of which were shown in marvelous form. In spite of one of the severest and most trying of winters, followed by a spring and early summer equally unfavorable to good gardening, the condition of almost every plant shown at this exhibition was perfect. As an indication of the strength of horticulture in England the show was a surprise, even to the well-informed who expected great things. There can be no question of the claim of Orchids to the first position among garden-plants; the exhibits proved it as strongly as the crowds of visitors who gave unrestrained expressions of delight at the wonderful specimens shown by both nurserymen and amateurs. "Orchids first, and the rest nowhere" was the comment of a companion who disliked the hustling and crush which prevailed almost the whole day through wherever Orchids were staged. Public taste is not quite so partial as this, however, appearances notwithstanding. The collections of Orchids contained so many remarkable examples that much time was needed to see them all. Even connoisseurs lingered about the Orchids, note-book in hand, while cultivators hung round and wondered "how it was done." For it is not every one who essays Orchid cultivation that can accomplish such things as are to be seen in the collections of Baron Schrœder, Sir Trevor Lawrence, the Baron Rothschild, Mr. Sander, Mr. Cypher, and others. Orchids are not easily killed, it is true, but they are only rarely grown to perfection. "It is all done by looking after them," declares a master of the art, while another will tell you that "no plants are so easy to grow as Orchids, when once you understand them," truisms which tantalize instead of helping one.

The collection of Orchids from the famous St. Albans nurseries was the largest and richest ever exhibited from any one garden; indeed, I doubt if any one but Mr. Sander could make such a display. The immense houses at St. Albans are packed with all the best and richest of Orchids from almost every part of the world, and most of the plants are possessed of all the rude health which is common to newly imported pieces. With so much of the best material to select from, together with exceptional cultural skill, Mr. Sander was certain to make a fine display. But it was much finer even than could have been anticipated. From one end to the other of a tent 130 feet long, Mr. Sander had arranged a collection comprising many hundreds of plants and disposed with excellent taste. First came a large group of huge specimens of *Cymbidium Lowianum*, mixed with Odontoglossums of every kind, some of them of great beauty and value. After these came a grand group of *Lælia purpurata* in variety, full of charm and variety, as also was a cloud of yellow insect-like flowers upon strong tall spikes of *Oncidium ampliatum*. Mass after mass of striking plants, such as *Cattleya Skinneri*, *C. Mendelii*, *C. Mossiæ*, *Dendrobium Dalhousieanum*, *Miltonia vexillaria* and *Odontoglossum crispum* varieties, and Masdevallias were rendered effective by being alternated with groups of miscellaneous plants of exceptional interest. Among these latter were *Grammatophyllum Measursianum*, the most interesting, and certainly the most beautiful, new Orchid exhibited; *Cypripedium Rothschildianum* and *C. Elliotianum*, the hybrid *Masdevallia Mundyana*, the result of a cross between *M. Veitchii* and *M. ignea*; *Odontoglossum excellens Sanderæ*, *O. excellens Schrœderi*, *O. crispum Amesianum*, with many others. A very prominent feature of this group consisted of a large number of beautifully flowered plants of *Odontoglossum citrosmum*, which were suspended among elegant Palms and Ferns, so that their spikes hung gracefully and with most charming effect. It is impossible to do justice to this, or, indeed, to any of the large groups of Orchids exhibited; one can only say what was said, after a thorough inspection of Mr. Sander's group: "A wonderful exhibit, and a great credit to those who made it."

Messrs. Low & Co.'s collection followed, and contained some beautiful plants of Dendrobiums, Cypripediums, Phalænopsis, Epidendrums, etc. Messrs. B. S. Williams & Son exhibited a fine group of a miscellaneous character, Cypripediums predominating. There were also several grand specimen baskets of the white-flowered *Utricularia montana*, each about two feet through, and as well bloomed as a Pansy. Grown so excellently, this plant is almost as effective as *Phalænopsis grandiflora*. Mr. Cypher, of Cheltenham, also showed a grand group of Cattleyas, Lælias, Odontoglossums, etc.

The amateurs' exhibits were in a tent separate from that containing the nurserymen's plants. As was to be expected, the collections from Baron Schrœder and Sir T. Lawrence were remarkable for the wealth of variety and excellence of culture they revealed. Some of the plants from the famous Dell collection were marvels of floral wealth and vigor. *Odontoglossum Piscatorei*, var. *Veitchii*, the highest-priced of all cool Orchids, was there with two very fine spikes of its large, beautifully marked flowers. *Masdevallia Courtauldiana*, the pretty hybrid from *M. rosea* and *M. Shuttleworthii*; the curious though scarcely beautiful hybrid, *Miltonia Bleuiana*, raised in France from *M. Vexillaria* and *M. Roezlii*; *C. Lawrencianum Hyeanum*, the pallid variety which is so highly prized by admirers of this genus; enormous plants of Lælia, Cattleya, Odontoglossum, Dendrobium, Vanda, Ærides, Masdevallias and others came also from the Dell.

Sir Trevor Lawrence always contributes most liberally to these exhibitions, and his plants are invariably of unusual interest to the Orchid connoisseur, for they are either nearly all rarities or extremely handsome varieties. *Spathoglottis aurea*, *Maxillaria Sanderiana*, *Ærides Savageanum*, *A. Houlletianum*, *Cypripedium grande*, var. *atratum*, and *C. Fraseri* were some of the most noteworthy.

Vanda teres was exhibited in splendid form from the gardens of Baron Rothschild at Gunnersbury Park—a group of about forty plants, each from two to three feet high, and each bearing one or two many-flowered racemes. These plants had been grown in a pine frame, where they get full sunshine all the year round, with a very high temperature. Many people know this plant, with its short, fleshy, terete leaves, but comparatively few have the pleasure of flowering it. At Gunnersbury it is grown in quantity to supply cut flowers for the table as though it were merely a Rose or Carnation.

The Duke of Marlborough sent a collection of grand Cattleyas and other Orchids from Blenheim, and Mr. Joseph Chamberlain exhibited a collection of the flowers of Masdevallias which were very tastefully arranged with Ferns. Numerous other collections were contributed by some of the best-known English amateurs, almost every group being a good exhibition in itself.

Roses.—Large and well-grown specimens of some of the best exhibition Roses were shown by Messrs. Paul & Son, Cheshunt; W. Paul & Son, Waltham Cross; Charles Turner, Slough, and W. Rumsey, Waltham Cross. Among the new kinds were Danmark, Crimson Queen, Spencer, Mrs. John Laing and Souvenir R. Gounod, which seem to possess all the characters of first-rate Roses. The large specimens were of the usual compressed bush form, the only exceptions being several pretty white single-flowered kinds, which were untrained, and which were, therefore, as elegant and artistic as Roses generally are when their natural habit of growth is not interfered with. Large Bamboos and purple-leaved Maples formed a charming background to some of the groups.

The Calceolarias were marvelously well grown—indeed, they were in some cases almost too fat with flowers to look artistic. Tuberous Begonias were shown by Messrs. Laing and Messrs. Cannell, the group of double-flowered kinds from the latter being exceptionally attractive. Wonderful though these double ones are, they are less beautiful than the single-flowered kinds. Among Mr. Cannell's plants were several with flowers six inches across each way, and a considerable number of salmon-pink and pale madder colors, which, Mr. Cannell informed me, are all the fashion now. Very large groups of Caladiums, Pæonies (both herbaceous and tree), Rhododendrons, Azaleas, Anthuriums, Ferns, Leschenaultias, Pelargoniums, Gloxineas, and many others helped to fill the four great marquees provided. Mr. Rivers sent a collection of pot specimens of Oranges, Peaches, Plums and Cherries in fruit. Pansies from Scotland, Lilacs from France and Eremurus from Cork were shown, and they indicate the comprehensive character of the exhibition.

London. *W. Watson.*

New or Little-known Plants.

Crinum Asiaticum.

THIS is the largest Crinum known. It forms a conspicuous object in the Palm-house at Kew, its huge evergreen leaves being decidedly effective among Palms, Cycads and such-like plants. Its flowers, too, are ornamental, and they are produced frequently, say half a dozen times a year, on full-grown plants; they are white, with crimson filaments, and they are fragrant. The plant from which the accompanying photograph was made is five feet high and eight feet through. The large bulb is buried in the soil, but its exposed stem-like neck is a foot long and

six inches in diameter. Each leaf is five feet in length by eight inches in breadth, channeled all along the midrib, and colored bright green, with darker reticulated veins. The peduncle measures two and a half feet in length, and the head is composed of about fifty flowers, each with a tube four inches long and spreading segments nearly as long.

C. Asiaticum belongs to the evergreen group of Crinums, all of which are easily cultivated, free-flowering and attractive. They require a rich soil, plenty of water both winter and summer, and a tropical temperature. Although not much grown nowadays, *C. Asiaticum* has been in cultivation over a century and a half. It is widely distributed in the tropics of Asia, and it varies somewhat in consequence. The following are now considered to be only varieties of it by Mr. Baker—namely, *C. declinatum*, Herb.; *C. sinicum*, Roxb.; *C. procerum*, Carey; *C. anomalum*, Herb. At Kew there is in cultivation a variety with leaves handsomely streaked with creamy white. Suckers are produced abundantly by large plants, and these, if removed in spring and treated liberally, will grow into large specimens in two years. The large, fleshy, tuber-like fruits of this species are also freely produced on cultivated plants.

Kew. *W. Watson.*

Fig. 50.—Crinum Asiaticum.—See page 282.

Cultural Department.

Points of Merit in Vegetables.

SNAP BEANS.—Since the general introduction of the wax-podded sorts people have come to judge of this vegetable almost entirely by its appearance, the longest, whitest, handsomest pods being considered the best; but a better observation will show one that the whitest pods in the basket are by no means the whitest when cooked. If we cook the clear white pods of the Ivory Pod and the yellow ones of the Golden Wax, we shall find the latter much the lighter and brighter colored; and if we go further and taste them, there will be no doubt as to which is of the better quality. The value of a snap bean rests in its fleshy pod, and in judging of the merits of different lots we should not only look at the external shape and color, but at the flesh. This should completely fill the pod so that there is little depression between the seeds, and on cutting the pod at these points there should be no cavity seen. The flesh, too, should be firm and solid. In some sorts it is very juicy, and even watery when the pod is young, but speedily becomes spongy or pithy. Last, but by no means least, the pod should be, as the Europeans say, "free from parchment"—that is, the inner lining of the pod should be thin and without fibre, a point which is often overlooked, the observer being satisfied if there is no "string" at the back.

Beets.—Most people are content if the root is smooth, shapely and of good color, but this is by no means all. The color should be one that will hold while cooking—should be "fast"; and, secondly, the top should be small and compact, and occupying as little as possible of the upper portion of the root, because it will always be found that the portion just below the base of the leaves is harder, rank-flavored, and lacking in sugar. This is so invariably true that the French and German sugar-makers always cut off and throw away this portion (often amounting to from three to five per cent.) of the root, saying they cannot make good sugar when it is taken.

Cabbage.—In a long and large-stemmed plant we shall find the leaves relatively far apart and with large, coarse midribs; and as a portion of the stem extends up into and becomes the objectionable core of the head, it carries with it the same character, and we have a large-cored and soft-hearted head, the base of the leaves being separated in the head in the same way as below it. Again, the shape of the leaf is important. A frequent fault is, that the blade does not extend to the very base, thus giving the leaf a distinct stem. The leaves of the head will be of the same character, and, consequently, the heart, made up of the bases of the leaves, will be loose and "stemmy" at the centre, even if hard and firm at the outside. The leaves should also be abundant in number, long, and should show a decided tendency either to enclose the centre or to be dish-shaped. If not, we have a head in which the leaves do not lap by each other, forming one with either an opening or a soft spot down through the centre, through which the seed-stalk will soon push its way, the head thus becoming worthless. Lastly, the leaves of all cabbages should be thick and brittle, rather than thin and fibrous.

Cauliflower.—The common opinion is that cauliflower-heads should be smooth and flat; but Long Island gardeners, who have given more attention to this vegetable than any one else in this country, declare that the head should be round rather than flat, and as knobby as possible. They claim, and we think with good reason, that the flat umbel-shaped head must of necessity have a much larger proportion of stem than one which is in general outline nearly globular, and in which each section is also globular, thus giving a rough or knobby, rather than a smooth, head. Certainly such heads are much heavier and more solid, and we think are of better quality.

Carrot.—Few people in this country know how palatable well-grown and properly cooked carrots are, but in order to fully appreciate them one must use the small and finer-grained garden varieties, and when they are in proper condition, which is when they are young and tender, not waiting until they are nearly full-grown, as is commonly done.

Celery.—Here, as in beans, too much weight has been given to whiteness; and flavorless and soft White Plume has ruled the market. It certainly is true that excessively blanched and white celery is always of inferior quality. Often it is actually worthless, being pithy and soft. Good quality is indicated by fine grain and solidity. A person should be able to snap a stem into three pieces by taking it in both hands and giving a quick jerk with each hand in opposite directions. The break should be square, showing brittle fibre, and as little "string" at the back as may be. The flesh should be firm, solid and fine-grained, and have a rich nutty flavor. Such celery is rarely seen in the market, because of the demand for the whiter and (to the novice) more attractive kinds; but no one knows better than the Kalamazoo growers how to produce it if it is called for.—*Professor W. W. Tracy, before the Michigan Horticultural Society.*

Notes from the St. Louis Botanical Gardens.

Tigridia violacea is an interesting member of this Mexican genus, and, this year at least, is the first to flower by several days. It bloomed on the last day of May at the Botanical Gardens here. It is about one foot high, bears, in succession, several violet-colored flowers with variegated centres an inch and three-fourths wide. Not quite as attractive as *T. buccifera*, though having larger flowers, it is a fitting companion to it, coming into bloom only a few days earlier.

Pentstemon pubescens, which is quite common in this part of the country, has been in flower for fully two weeks. It selects dry situations, clay banks, mostly in half-shaded places. Just before it flowers, or late in August, seems to be the most suitable season for transplanting this species, or at least it does much better than when set in spring.

Potentilla paradoxa, now in flower, is quite an interesting hardy perennial, about two feet high, bearing at the terminus of the branches numerous flat, pale yellow flowers, a little more than an inch wide, which come in long succession.

Cerastium tomentosum, a hardy perennial of eastern Europe, scarcely a foot high, with light downy foliage and pretty delicately white flowers, is a common garden-plant and a useful one for the open border. It is quite hardy and thrives in any ordinary garden-soil.

Houstonia purpurea, at this season, when there is a scarcity of wild flowers, is one of the most attractive. It usually grows less than a foot high, in fine round clumps, with nearly white or, sometimes, pale purple flowers. It seems to be suited to any soil or situation that is not too wet, and does well in sun or shade. If the plants are taken up from their natural home in full leaf, just before they flower, they will scarcely notice the change, and will bloom as freely, if not better, than when left to themselves.

A fine clump of *Ansonia Tabernæmontana* has been in bloom in the herbaceous grounds for some time. It is not a showy plant, but it forms a nice large clump of its thick, green foliage, four feet high by as many wide, and each of the many stalks terminates with a small panicled cyme of pale blue flowers. It will do fairly well in shade, but a clay soil and full sunlight suit it here.

Phlomis tuberosa, one of the Mint family from eastern Europe, much resembles some of our American Monardas. It attains a height of about four feet, is quite hardy and easy of culture.

Cypripedium acaule, *C. pubescens* and *C. parviflorum*, all of which have bloomed quite freely here, are now past flower, and even *C. spectabile*, the last one of our natives to flower, is nearly past. These native Orchids seem to do as well here, with a little extra care, as in more northern latitudes.

One of the best plants at the garden at this season is *Crinium longifolium*, a member of the Amaryllis family, a native of India. Some plants are more than three feet high and have three or more flowering stems. Fifteen large showy flowers are not uncommon on one stem, and they come in long succession. The flowers vary in color from pure white to rose-purple, are tubular in form, six or eight inches long, and about three inches wide at the opening. The plant is perfectly hardy here, and, with a little protecting, would probably survive any New England winter. The bulbs are very large.

St. Louis. *F. H. H.*

German Irises.

Iris Germanica has been true to its season, and now follow the hybrids, known to the trade as German Irises. As is well known, these are among the most satisfactory of hardy plants. Their creeping rhizomes are proof against the severest weather, and they increase rapidly. The flowers, though not very lasting, are usually very attractive, or, at least, among their countless forms, any taste may be gratified, as they range through so wide a scale of color and markings. *I. Germanica* is not in cultivation a seed-bearing plant, and so careful an observer as Professor M. Foster is convinced that the hybrid Irises are not of its progeny; these plants being hybrids of *I. pallida*, *I. variegata*, *I. sambucina*, *I. squalens*, *I. lurida*, *I. neglecta*, *I. amœna*, *I. plicata* and *I. Ewerti*, and possibly of *I. flavescens*.

The hybrids of *I. pallida* are easily recognized by the withery white spathe valves, which lose their greenness before the bud is swollen. They vary in color from nearly pale blue to a deep blue, some having a reddish tinge. Queen of May (rosy lilac) is a familiar example of this strain. The *I. variegata* blood is seen in forms like Louise, Lila and Jenny Lind, with golden standards and purple-brown falls. Among a collection of hybrid Irises will usually be found many smoky or bronze-tinted forms, as Diana, Magnet and Nemesis. These are from *I. sambucina*, *I. squalens* and *I. lurida*. *I. neglecta* is responsible for those which have standards and falls of white, marked with purple, such as Madame Chereau; and *I. amœna* for those with white standards and marked falls, such as Fairy Queen.

These conclusions reached by Professor Foster are readily verified by any one who cultivates the species and a collection of hybrids. It is one of the features of this section of the Iris family that they possess infinite variety, giving scope for much interesting study. Some of the hybrids are so much mixed in blood that their parentage is not so easily traced as those mentioned above, and these will be likely to furnish puzzling problems to the most skillful. In the mean time these are the beautiful flowers unfolding day by day to be enjoyed, and there are few more pleasing pictures in the hardy garden than good clumps of German Iris. With clean, attractive foliage and abundance

of gay flowers, they are well named "the hardy Orchids." The flowers individually are not very lasting, but strong plants produce many blooms, and the season extends over several weeks, with a daily unfolding of new beauties.

Elizabeth, N. J. *J. N. Gerard.*

Early Peas.—Another season's trial at this station satisfies us that the green-skinned extra Early Peas of the Kentish Invicta type are not only earlier, but more vigorous and productive than the common extra early varieties of the Daniel O'Rourke type. But neither type has high quality enough to make it the best stock to work upon for improvement. In the mere matter of earliness both excel, but we ought to develop an extra early of fine table quality, vigorous habit and productiveness. Market buyers in the cities get few peas which country people consider fit to eat, and growers could make money by offering peas of high quality for discriminating customers—at least those who sell their own peas to consumers could. For home use wrinkled peas can be had for every season, but the very earliest varieties of the Alpha type come hard after the Daniel O'Rourkes. What we need is the production of some well-flavored early sorts which will bear with sufficient abundance to be profitable market sorts and supersede the flavorless extra early peas which are now universally sold.

Raleigh, N. C. *W. F. Massey.*

Alstromeria pelegrina.—Last year I noted the beauty of the white form of this plant, which is also known as the Lily of the Incas, though, of course, not a Lily at all, but one of the *Amaryllidaceæ*. The white variety is beautiful certainly, but the typical form is proving itself equally good, and much more showy than its variety Alba. The color is a soft pink, with a shade of green, and red lines. A small root imported last fall has produced many flower-sprays, and they last well when cut. This Alstromeria is not to be recommended for out-door planting, but as an in-door pot-plant. It is easily raised from seed, as these germinate much more readily than those of other kinds, but I have a suspicion that it depends not so much on the species, whether the seeds germinate readily, as upon their being recently gathered, for I know that in the seeds of the same species in the hands of different persons there was a great difference in the period between sowing and germination.

South Lancaster, Mass. *E. O. Orpet.*

Grammattophyllum Measuresianum.—This plant is now flowering, for the first time in America, I think, in the collection of Mr. W. S. Kimball, of Rochester. It is a stately plant, with enormous pseudo-bulbs and handsome, broad foliage; it also is very free in its habit of growth, and requires little attention. On the plant at Rochester a spike, four feet high, carries forty-five finely marked and well-developed blossoms. They are light yellow, profusely spotted with chocolate. Basket culture, with very little compost about its roots, a good supply of air during its growing season, and a temperature of sixty-five degrees will suit its requirements. At the great Temple Show in London, held recently, this beautiful Orchid, exhibited by Sander & Co., was universally admired and ranked among the finest in the display.

New York. *A. Dimmock.*

Correspondence.

Fruit-trees on Lawns.

To the Editor of GARDEN AND FOREST:

Sir,—There has grown up a canon that condemns the use of fruit-trees on lawns, but there seems no sufficient reason why the useful and beautiful should be divorced. A lawn with fruit-trees alone may be made very attractive, although it would be better to combine fruit and nut-bearing trees. Apple-trees scattered about and grouped on lawns with Pear-trees, Walnut, Butternut and Chestnut-trees may produce fine effects. The lawn is too often a homeless place, lacking in the hearty welcome that fruit-trees give us. I have a group of Buffam Pears that stand thirty feet tall, and are much admired, besides yielding me twenty bushels of fine fruit yearly. Other Buffams stand about my lawn to relieve the uniformity of round-headed and conical trees. This Pear is one of the best of all upright-growing trees for lawns, giving not only novelty of form, but fine foliage and color. But there are other Pear-trees of singular grace and charm. The Anjou, for example, makes a noble head. The advantages of lawns of this sort are that many who cannot afford to assign ground for lawns with ornamental trees will do so for those that return a profit. The only serious disadvantage is the possibility that by fruit-gathering some damage may be done to the foliage or important limbs broken, but with proper care there need be no such danger.

Plums do not make good trees for the lawn, as a rule, because they are short-lived, and are liable to be misshapen by the necessary cutting that removes black knot. But there are few handsomer trees than Cherries, either Murillo or Heart. But my preference has been to grow them mostly in shrubberies or on the edge of the lawns. The Persimmon forms a good crown, and adds to the number of good lawn fruit-trees. It is hardy with me in central New York, although I do not know of any trees hereabout except my own.

I agree with Henry Ward Beecher that America furnishes no sight more beautiful in all its blossoming flora than an Apple-tree in full bloom. The variety in shade and in form of petals is remarkable. I have before my window a Kirkland Apple-tree and a York Pippin. The blossoms of the former are massed like a huge snowball. The petals are long and twisted and star-like; those of the latter are broad, and held up like a saucer. The Japanese worship the Plum and Cherry-blossoms, and in our shrubberies we have nothing finer than Wild Cherries, and Wild Plums and Crab-apples, in addition to our cultivated Cherries and Plums. The finest group that I have had this spring consists of Governor Wood Cherry-trees, bordered with Late Montmorencies.

Clinton, N. Y. *E. P. Powell.*

[We are not aware of the existence, in treatises of landscape design, of any such canon as that laid down by our correspondent, and if fruit-trees are seldom used in pleasure-grounds it is probably because there are some good reasons against the practice. There are cases in which these trees could be satisfactorily planted on grounds about houses—about a farm-house, for example, with surroundings of orchards and meadows and cultivated fields. The question is one of details and particulars, and no rule of universal application can be laid down. If by a lawn is to be understood a slightly undulating body of turf with foliage so disposed about it as to make the most pleasing sylvan composition, and especially to introduce an element of obscurity and indefiniteness in its outlines, we should select the trees best suited to produce that effect, and it is difficult to see why fruit and nut-trees should be preferred to other forms of foliage, or how they could be mixed with other forms of foliage with any gain in respect to harmony or agreeable contrast. Further than this, fruit-trees, as a rule, are apt to take a formal shape, especially if they are pruned and managed with reference to the production of the greatest amount of fruit. Again, nearly all of them are more subject to be injured in appearance by fungi or insects than are those trees usually preferred for lawns. The beauty of the bloom of a Cherry-tree is evanescent, and when not in bloom a mature tree is usually very stiff and unsympathetic in its form when mingled with other trees, or it suffers from some disfigurement. Its beauty during the short flowering period does not compensate for what would be lost in substituting a Cherry for some other tree which is more desirable throughout the year. Besides this, fruit-trees, as a rule, have little beauty in the autumn. The Cherry turns slightly, and so do some of the Pears which contain the blood of the Chinese Sand Pear, but, as a rule, fruit-trees lack the beauty of our native trees in autumn, and it is very desirable in lawn-planting to take advantage of the beauties of autumn coloring.—ED.]

A Neglected Evening Primrose.

To the Editor of GARDEN AND FOREST:

Sir,—There is a glowing California field-flower that possesses many charms, and well deserves introduction to the garden. In its season this lovely Californian Œnothera, with its dwarf growth and its compact clusters of golden bloom, appears as distinct and as striking a feature of the landscape as the great flame-red Eschscholtzias. One can almost claim that, when the Wild Poppy became the state flower, the modest merits of this perennial Evening Primrose were sadly neglected.

The other day—it was May 10th—I walked up the long seaward slopes of Berkeley. Every vacant lot and the very streets were golden with little plats of shining blossoms. I began to

remember that for three or four months this brilliant display continues; I bent down and counted the flowers and yet unopened buds on the nearest plant of *Œnothera ovata*. The plant was nowise conspicuous among its fellows that dotted the slope; in fact, many showed far more flowers and covered a greater area. The sample plant, however, made a very respectable display. The circle of its outer leaves was about a foot in diameter; they rested upon the turf, hardly rising four inches above it at any point. Fifteen open flowers rose well above the foliage, and no less than thirty-six buds could be counted without pulling the crown apart and descending to the microscopic sizes. Each of the four-petaled flowers was fully as large as a fifty-cent piece; one almost covered a silver dollar. The rich clear yellow hue, and the regularity of the petals and stamens, with the golden ball of the erect pistil, formed a charming whole.

Botanists are interested in this little Œnothera on account of its peculiarly long calyx-tube, which is never less than one inch, and usually is from three to five inches long. The ovary is concealed in the very crown of the plant, and is thus protected from accident in as complete a manner as one could well imagine. There are not many flowers of this curious type, and none is better adapted for a garden-flower. *Œnothera ovata*, if planted on the lawn in a solid bed of, say, ten feet square, would surprise every beholder by its abundant bloom and its glowing color.

Niles, Cal. *Charles Howard Shinn.*

The American Association of Nurserymen.

Annual Meeting at Minneapolis.

THE sixteenth annual meeting of the American Association of Nurserymen was held during the first week of June in Minneapolis. President Emery called attention in his address to the strength of the organization, which now numbers more than four hundred members, with abundant money in the treasury and a history which proves that substantial benefits have been received from concerted action. In regard to the condition of the business the President said: "We have to congratulate ourselves upon the improved tone of the nursery business. Nursery stock is worth from twenty-five per cent. to forty per cent. more at wholesale than it was a year ago, but this is no good reason why indiscriminate planting should be indulged in, for the fact is that the past prevailing low prices have discouraged heavy settings, and the overplus has thus been reduced, and prices raised to a point where it pays the grower to produce stock."

Mr. Emery advocated among the improvements to be desired the official adoption of a general telegraphic code by which orders could be abbreviated, and time and expense saved; and on the subject of the World's Fair he said: "The fact is patent that California is determined to control the Horticultural Department. The work of the Classification Committee, of which a member from California is chairman, is pathetic in its ludicrousness. That they assign four classes to horticulture and fourteen to viticulture shows the animus. A chief of the Horticultural Department, a Californian, has been appointed; his appointment has not been confirmed—the principal opposition coming both from his own state and from the horticulturists of the country at large. Under his management and dictation we can expect the wines, brandies and citrus fruits of California to head the procession, and her dried fruits and flavorless orchard products to occupy space that rightfully should belong to the class of fruits that are the bone and sinew, so to speak, of the business. A vigorous protest against such folly is in order, and failing to secure the recognition that our suggestions, as the nurserymen of the United States, entitle us to, we ought to wash our hands of the entire matter."

The committee who made a report on the President's address also protested against the World's Fair classification, and resolved, "That we most earnestly protest against the appointment of Mr. Walter S. Maxwell, of California, as Chief of the Division of Horticulture of the World's Columbian Exposition, believing as we do that there should be a man at the head of this great work who, by taste, knowledge, experience and acquaintance, is in full touch and sympathy with every horticultural interest of this great country."

Wm. C. Barry, of New York, E. L. Watrous, of Iowa, N. H. Albaugh, of Ohio, and Charles W. Garfield, of Michigan, were appointed a committee to meet the Board of Directors of the World's Columbian Exposition in Chicago, to present to that body the action of the Association.

Among other resolutions adopted by the Association was one commending the work done for horticulture through the Eleventh Census, and tendering thanks to the superintendent and to Mr. J. H. Hale, the special agent, for the complete investigation which had been made of the nursery interests in the United States, and requesting the superintendent to issue a bulletin report of this work similar to the one on floriculture before the opening of the fall season.

It was decided to hold the next annual meeting at Atlanta, Georgia, and the following list of officers was elected: President, J. Van Lindley, North Carolina; Vice-President, W. J. Peters, Ohio; Secretary, C. A. Green, New York; Treasurer, G. A. Whiting, Dakota. Executive Committee—W. F. Heikes, Alabama; W. C. Barry, New York; G. J. Carpenter, Nebraska.

Extracts from some of the addresses delivered at the meeting are given below:

GROWING AND MANAGEMENT OF EVERGREENS FROM THE SEED.

This subject was treated by Charles F. Gardener, of Iowa, who said:

"In growing evergreens from seed the beds are prepared four feet wide, running east and west, and raised three to four inches. Stakes fourteen inches high are driven on the north side, and twelve inches high on the south side of the beds; on these stakes are nailed strips of boards two inches wide and one inch thick. The seed is sown broad-cast, at about the rate of four to the square inch, after the soil is well pulverized by raking, and a garden-roller is run over the bed, lengthwise, twice if necessary, to firm each seed in its place in the earth. The beds are then covered with evergreen leaves to the depth of two inches. As soon as the seeds sprout the leaves are raked into the alleys between the beds, and the beds covered with white sand from one-quarter to half an inch in depth.

"Shades are made of lath put together in frames four feet square, with the lath three-quarters of an inch apart; and the frames are put on the strips nailed to the top of the stakes, the lath crossing the bed north and south.

"When the evergreen leaves are taken off, the sand is put on as fast as the leaves are removed. The leaves must be slightly shuffled back and forth while being removed, to kill the weeds that have started, and the little trees will have a perfectly clean bed to make their appearance on. The lath-frames are put on as soon as the beds are covered with sand. We never water the beds, and if cracks appear more sand is put on.

"After the trees appear above the sand, and before the seed-shells have dropped off, dry sand is sprinkled over the beds in sufficient quantity to fill all little cracks and holes that may appear. The beds should be carefully hand-weeded the first season, and if a good stand is secured the first year the weeds will trouble but little the second year.

"We leave the lath-frames on until they are needed the next season to cover new beds. In damp, cloudy weather we raise them to an almost perpendicular position, thus giving the plants all the air and light possible; they should be replaced as soon as the sun comes out.

"Trees should not remain in the seed-beds longer than one or two years. Yearling trees should always be bedded out; two-year-old trees may be bedded or planted into double nursery rows; in either case they require no shade.

"The birds must be kept away from these beds, especially from White Pine beds, or they will take every tree as fast as it makes its appearance. The worst birds with us are the blue-jay and turtle-dove."

GEORGIA AS A FRUIT-GROWING STATE.

Major Gessner, general agent of the Central Railroad of Georgia, said:

"Five years ago little serious attention was given to fruit-growing for market in Georgia. Since that time, however, railroad facilities have been increased, so that we can supply fruits very early to northern markets and place them there in good condition. As a consequence we have realized perhaps the largest prices that were ever paid for peaches in the New York market, which was twenty dollars a bushel for the earliest Alberta peaches. Usually the first shipments of peaches are made about the 20th of May. They are expressed to Savannah, and thence to New York by steamer—something like two and a half or three days' journey. Year before last the Georgia peach crop brought better prices and had a better sale in the New York market than Delaware peaches. Grapes, too, are proving profitable, and we have been receiving, for our early ones, five cents a pound at the station.

"Within the past two years the capacities of our state for growing fruit has attracted much attention. Near the centre

of the state three companies, organized in Ohio, have purchased tracts of 1,300 acres, 1,250 acres and 600 acres respectively. Mr. J. H. Hale, of Connecticut, has purchased 800 acres, while fruit-growers from New York, Michigan and other states have bought large tracts. The Albaugh Company set out at one time last winter 70,000 Peach-trees on 400 acres. It will be seen from this that there is an opening in Georgia for nurserymen. After our large peach crop two years ago many people wished to embark in the fruit business, but there were not trees enough to supply the demand, and there are not enough to-day. In this fruit-growing part of Georgia, where there are little frost, and a soil peculiarly adapted to small fruits, peaches and grapes, there is promise of great fruit-production in the future."

ROCKY MOUNTAIN EVERGREENS.

Mr. C. S. Harrison spoke on this subject. He said:

"The problem of clothing the western plains with forests is an important one. Conifers by the million have been shipped over the Missouri River, and by the million they have failed. Near the one-hundredth meridian the White, Norway and Black Spruces and the Arbor-vitæ are failures. The Scotch Pine does well while young, but in time of trial it goes down before the drought. The Austrian Pine thrives while young, but the White Pine is uncertain always. Looking down from the foot-hills of the west, and belting northern Nebraska, there is a Pine, however, which is equal for the emergency. Six years ago I brought some from the mountains and planted them in the open ground without protection. I cultivated the first year, and after that left them to utter neglect. The ground was sometimes very dry, but none died after they were established, and they averaged about a foot a year in growth; taken from the mountains they are hard to transplant. One year with another I save fifty per cent. They grow readily from seedlings, and these transplant as well as any evergreens.

"I think this Pine (*P. ponderosa*) the best for our region. The leaves are glossy and of deep, rich green, and often eight and ten inches in length. The wood is heavy and the grain coarse, from rapid growth, but it takes a fine polish, and is used for grain finish in some of the finest houses in Colorado.

"The Douglas Spruce is the great timber tree of the Rockies and Sierras. I have recently visited many of the leading nurseries of the east, and find that in rapidity of growth it led all the conifers. This tree has an almost infinite variety of form and foliage. Some trees will have short leaves, others heavy and long. Some will be light green, and others almost blue, with a frosting of silver. The mountain seedlings transplant readily, planted in the open air.

"*Picea pungens* is king of the Spruces for the first thirty years of its growth, and its silver sheen is matchless. If anything tends to retard the growth, or when old age comes on, its color reverts to green. This is a rigid tree, with stiff shelf-like branches. Only about one tree in four, or perhaps one in ten, will have the exquisite silver color. It transplants very readily. The best way to secure the finest specimens is to go to the mountains and collect the small trees with colors already established.

"Almost equal in beauty, with more of grace and softer outlines, is *Picea Engelmanni*. This is the giant of the high altitudes. It grows in a belt reaching nearly 2,000 feet higher than *P. pungens*, shooting up well to timber-line. It transplants very easily. It will resist any degree of cold, and I believe with the Black Hills Spruce it will be one of the timber-trees for the great north-west. This tree has a sheen nearly as rich as that of the *P. pungens*, and is often of a graceful drooping habit.

"*Abies concolor* is queen of the Firs. No other tree has such a rich variety of color. The Blue Spruce is beautiful while young, but this Fir holds its color. One can often see a grove of these trees with their silver gleaming miles away. Some clusters have very deep color with plentiful frosting, so as fairly to sparkle. The new shoots are of light soft green; the older growth is nearly blue. On one tree the blossoms and cones will be purple, on another light green. The clear gum exuding from the cones flashes like pearls; and when a light breeze puts all this beauty in gentle motion, you have a scene worth a journey across the continent to see."

ONE WAY TO SELL NURSERY STOCK.

Mr. G. L. Grant suggested that if florists could be induced to plant ornamental shrubs of the most attractive varieties on their grounds their customers, when they saw these shrubs in flower, would be glad to place their orders there for delivery at the proper season if they could be assured of receiving plants of the same varieties. Improper planting has been the cause of much undeserved criticism of nurserymen, and so is the frequent long exposure of the stock in unexperienced hands after unpacking and before planting. If a florist had this stock on sale he could send a man who knew how to plant it properly. In other words, it is advisable for nurserymen to cultivate closer relations with florists throughout the country, and sell through them instead of traveling agents. These agents are often unknown, and buyers have become suspicious of them; but if they could deal with some one whom they could find again and whom they knew to be trustworthy, they would feel safer in ordering ornamental trees and shrubs; and inasmuch as they are buying of the local florist herbaceous and other ornamental plants, it would be very natural for them to extend their orders to one in whose judgment on horticultural matters they had confidence. The sample shrubs and trees which the florist could have would be an inducement and an assurance to purchasers who have been deluded with colored plates. Besides this, it is well known that trees and shrubs will thrive in one section better than in another. The local florist, being in the vicinity of the buyers, could soon determine which were the best kinds for that particular region, so that the most satisfactory selection would be made.

In the discussion which followed this essay, Mr. Albaugh thought that while the theory might be good, it would be found in practice that few florists could give sufficient attention to a retail tree business in addition to their own. One intelligent tree agent would sell more stock than a dozen florists in a county by careful canvassing among individuals who take no interest in flowers, and who care for nothing unless it is forced on their attention and unless they are convinced that there is money in it. Mr. Albaugh had found business men who, for a fair compensation, were willing to devote their entire time to canvassing for the nursery trade, and it was just as legitimate a business as any other. After thirty-six years' experience and trying five or six ways of disposing of his goods, and abandoning one after another, he had at last adopted this one. He employs energetic men, and makes himself responsible for what they do, giving them certificates that bind their principals legally for their acts.

Mr. Harris thought that the plan suggested might answer for the sale of ornamental shrubbery, but it would be of no value in selling fruit-trees. Mr. Hale said, that from what he had learned of florists in getting statistics for the census, nurserymen, in many cases, might do well to unite with them in the dissemination of certain specialties, because, in the first place, this would be simply an addition to the florist's business, and, in the second place, he had found the florists, as a class, unusually enterprising, and the enormous development of their business during the last fifteen or twenty years shows them to be in close touch with the people and the people's wants.

Mr. Hill had no doubt that an intelligent florist would make a good salesman if he could give time and attention to the matter, but the florist who has not enough business in his legitimate line to occupy him at the time when nursery stock should be sold had better retire. The busy seasons of both industries come at once, and a successful florist has all he can possibly do in his legitimate calling at just the time when shrubs and trees should be sold.

Notes.

Three hundred thousand tons of vegetables were brought into the city of Paris last year, and their value reached the amount of $25,000,000.

The bright purple and fragrant flowers of *Clematis crispa* are already opening, and since they will continue to appear until frost this must be considered among the valuable garden-plants which are native to this country. Besides the beautiful solitary flowers, the foliage is very graceful, and the plant, although it is found from North Carolina to Texas, is perfectly hardy in our northern states.

We have received from the Meehan nurseries, Germantown, a spray of *Benthamia Japonica* in bloom, and the flowers closely resemble those of the Flowering Dogwood, although the white satiny bracts are narrower and more sharply pointed. Blooming as it does after the bright green leaves have attained their full size, this is a promising addition to the showy flowering shrubs for the gardens of our northern states.

A German journal states that the "Fragrant Goose-foot" (*Chenopodium ambrosioides*) is the sixty-sixth plant which has been recommended by Mr. John R. Jackson, of Kew, as a substitute for tea and coffee. It is a native of South America, whence it was exported under the name of "Jesuit Tea," but has become naturalized in Mexico and the West Indies, at the

Cape of Good Hope and in certain isolated spots in Europe. The whole plant has a strong, penetrating and notably aromatic odor, and, as it acts temporarily on the nervous system and in subduing cramps, it is useful as a mild medicine and tonic.

The statue of Mr. James S. T. Stranahan, which had been placed near the main entrance of Prospect Park, was unveiled on the 6th of June. It is the work of Mr. W. Frederick M'Monnies, a young artist who was born in Brooklyn and has lived for some years in Paris, and is the gift of the citizens of Brooklyn. Statues to living men are not often erected, but the exceptional honor was, in this case, well deserved, and, of course, it was fitting that Mr. Stranahan's figure should be placed where it would typify the greatest of his many services to his native town—the leading part he played in the establishment of Prospect Park.

A figure is published in the issue of the *Gardeners' Chronicle* of May 3d of a hybrid Sweet-brier Rose, with bright crimson flowers. This interesting plant was raised by Lord Penzance, and was described by him in a paper on the hybridization of species of Rose published in the eleventh volume of the *Journal of the Royal Horticultural Society*. It was raised from the Austrian Brier, fertilized with the pollen of the Sweet-brier, and is said to be intermediate between the two parents, its foliage having the fragrance of the Sweet-brier, while the flower, which is two inches across, is pale crimson, flushed on the under-surface with fawn-colored tints.

Few people know, perhaps, that any article of food is imported into this country from Egypt, but, according to the New York *Tribune*, that country sends us large quantities of onions, as many as 50,000 bushels often arriving in a single week. The onions, which are shipped from Alexandria to Liverpool, and thence to New York, are small and yellow, and not so good as those grown in this country, while they naturally deteriorate somewhat during their long voyage; but they are readily sold, because the price asked in Egypt is so low that, after adding freight charges and a duty of forty cents per bushel, a bag, containing nearly two bushels, is sold here for two dollars or two dollars and a half.

We have received a copy of the "Flora of New Bedford and the Shores of Buzzard's Bay," which is a careful revision of "A Catalogue of Plants found in New Bedford and its Vicinity," published thirty years ago. The author, E. W. Hervey, has made corrections in the nomenclature, and has added to the earlier list of plants such as have since come to his notice. An important part of this work is the "Procession of the Flowers," the object of which is to show the precise time of the year when each plant begins to flower. In this list the more conspicuous of the cultivated trees, shrubs and vines are included, and the dates will be found to answer fairly well for Massachusetts, Rhode Island and Connecticut. Inasmuch as the flowers of the same locality bloom every year with surprising regularity as to time, if we except some variations in the season of early spring flowers, one in search of a particular flower, if informed as to the time of its appearance, does not make a fruitless search by going too early or too late.

The *Vossische Zeitung* recently gave an interesting account of a gardener named Adophe Vard, living at Aubevage, near Gaillon, in Normandy, to whom a decoration had just been awarded by the French Academy. It seems that for thirty years Vard was employed as an oiler at the railway station in Vernon, and devoted himself to gardening only after he had earned the right to retire on a pension. But during many previous years he had spent his leisure hours in self-instruction to such good purpose that, without a teacher, he learned to read Greek and Latin as well as gained an intimate acquaintance with the classic writers of France. Later in life he essayed poetical composition himself. His chief work is a charming story in rhyme, called "Le Rêve de Muguette," in which the taste which turned him toward gardening is clearly evinced. Vard was too poor to publish this work, but the cost was borne by one of his friends, a neighboring inn-keeper; and it is the success of "Le Rêve de Muguette" which has brought him the purple ribbon bestowed for distinguished accomplishment in letters or the arts.

A writer in *Gartenflora* declares that if the present love for Chrysanthemums, which, almost everywhere in the north of Europe, has become almost a craze, ever spreads through the extreme south, it will prove that there is nothing that Dame Fashion cannot accomplish, for, he says, in southern Italy the Chrysanthemum is the "Flower of Death," and is rarely grown except in graveyards, or near by, for the purpose of decorating graves at the feast of All Saints. If it is seen in a garden the place is pretty sure to belong to a foreigner; no native would stick a Chrysanthemum in his button-hole, and the writer doubts whether ladies will ever fill their vases with them, and declares that he has seen an Englishwoman stared at by a wondering crowd in the streets of Naples because she was carrying an armful of these "unlucky death-flowers." At All Saints, however, the cemeteries become perfect "seas of Chrysanthemum-blossoms," other flowers seldom being mingled with them, and they are profusely planted near graves and along the borders of the cemeteries. In no part of Europe, continues the author, could the Chrysanthemum be grown to better advantage than in southern Italy, for it is green all the year round, and blooms from July to January. It often occurs wild, even in good old varieties with double flowers, although these seem to ripen seeds only now and then, and one form is entirely naturalized—a single yellow-flowered form—which grows in a somewhat ragged way, but is well covered with pretty green leaves which retain their freshness even in times of great drought.

On Thursday evening, June 11th, the students of the College of Agriculture of Cornell University held a grand jubilee and banquet to celebrate the prosperity of the college, and in honor of the graduating class, which is the largest in the history of that department of the university. President Adams, of the university, Ex-president White, Hon. O. B. Potter, of New York, and other distinguished guests were present, and made admirable speeches on the history and aims of agricultural education. The elaborate banquet was quite unique, in that everything on the tables, except the sugar and spices, was supplied by the farm and gardens of the department of agriculture. The farm furnished a large variety of breads, meats, and dairy products; the horticultural grounds and forcing-houses, fruits and vegetables; while the conservatories of the botanical department, in addition to a splendid display of decorative plants, supplied some very beautiful specimens of tropical fruits, including bananas, oranges, lemons, and figs. In an adjoining room the various departments of the College of Agriculture had also contributed to a very attractive exhibition of implements, products and appliances for laboratory study. With strong men at the head of all its departments, the College of Agriculture now seems to be entering upon an era of great promise. Several of the highest honors of the university have this year been awarded to students of the college, and work is soon to be commenced upon a new building, which is to be equal to the best of those occupied by other departments of the university.

Walter Baker & Co., of Dorchester, Massachusetts, have issued a handsome volume, entitled "The Chocolate Plant and its Products," in which is given a full and very interesting outline of the early history of the Chocolate-plant, with a sketch of the primitive methods employed in cultivating it and in utilizing the seeds, with an account of the introduction of the beverage into Europe, to which are added a botanical description of the plant and its commercial relations, with microscopic and chemical characters of the seeds as they appear in commerce, an estimate of the value of chocolate as an article of food, with suggestions relative to the cooking of chocolate and cocoa and receipts for using it in different forms. The historical value of the publication is very much enhanced by the introduction of a number of fac-similes of engravings taken from early European works. The first of these, from a rare volume by Bontokoe, shows the Chocolate-plant bearing its large fruit from the main stem and growing under the shade of a larger tree. This is interesting, showing the fact, now generally recognized, that the Chocolate-plant can only be grown successfully in the shade was realized more than three centuries ago. Interesting, too, is the photograph of the flat mortar used by the natives of tropical America for grinding the seeds of the Chocolate. This was done by means of a roller, or short thick stone of cylindrical shape, which could be used with both hands in the same way that the common rolling-pin is used. A fact which will be surprising to most readers certainly is brought out in the history of the Chocolate-plant, that is, that chocolate was used as a beverage in Europe before either tea or coffee was employed anywhere in western Europe. The volume is avowedly an advertisement of the firm whose name appears on the title-page. As an advertisement, however, it is a model of its kind, beautifully printed and illustrated, and full of curious and interesting information which is not accessible to one person in a hundred thousand of those who use the seeds of the Chocolate-tree in some form or other nearly every day of their lives.

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The Bermuda Juniper.

THE principal tree of the Bermuda flora is the Juniper, which covers the islands and makes the conspicuous feature of their vegetation. A few other trees grow naturally on these islands, and several others have been carried to them by man and have now become more or less firmly established. No tree but the Juniper, however, makes much show on the islands, which, from a distance, seem to be completely covered with it.

This Juniper has been growing on Bermuda for a long time. The wood, in the condition of lignite, was found at the depth of fifty feet below low-water mark during the dredging operations undertaken by the British Government in connection with the building of the Bermuda dry-dock. Subsidence of land is slow unless it is the result of some violent catastrophe, like an earthquake, and the fact that this Juniper grew on ground which is now far below the surface of the ocean is conclusive evidence that it has occupied these islands for a period so long that the mind of man, accustomed to measure time by years or by centuries, cannot form a clear notion of its immensity.

How did the Juniper first get to Bermuda? By what process did this tree, which is unlike other trees of its kind, first appear on these minute islands remote from all other land, and raised from the bed of the ocean by the patient toil of insects, long after the neighboring continent had assumed very nearly its present aspect? These are questions which present themselves to the student of nature as he sails into the harbor of Hamilton and sees the low islands about him everywhere clothed with this peculiar tree. It was not a case of separate creation, for the idea of the old philosophers, that plants and animals were created as they now appear in the different parts of the world where they occur, is no longer tenable. Man certainly did not bring the Juniper to Bermuda, for it is not quite four hundred years yet since man first saw these islands; and it is not improbable that trees are still standing which were growing when Juan Bermudez sighted the islands which Oviedo, the first naturalist to write on the New World, and a passenger with Bermudez on his ship "La Garza," described as "the most remote of all the islands yet found in the world."

Fifty years ago these questions would not have been easy to answer. Now the light which Darwin and Hooker and Wallace and other naturalists, working on the lines laid down by Darwin, have thrown on the origin of insular floras makes it easy to find a simple and, probably, a correct solution of the presence of the Juniper on the Bermuda Islands. There is a Juniper in North America growing in nearly all parts of the continent, from Canada to Florida, and from Cape Cod to Vancouver's Island; this is our so-called Red Cedar (*Juniperus Virginiana*), a tree which, in all important respects, is very similar to the Bermuda tree. It is a well-known fact that several of our birds are very fond of the berries of the Red Cedar and devour them in large quantities. To this is due the fact that this tree is so generally scattered and multiplied through the country, as birds void the hard stone-like seeds without injuring their vitality, and so spread them far and wide. There is evidence enough that our Red Cedar was growing on this continent long before Bermuda rose above the surface of the ocean; and a bird, with his crop full of Cedar-berries, may have been blown off from the mainland and found a resting-place on the then barren coral rocks, where the seeds he had brought found conditions which favored their germination. Our continental birds, in several species, now visit Bermuda every year in considerable numbers, and this habit must have had its origin in accident. The Red Cedar once established in Bermuda, it is easy to imagine that the climate and soil conditions of its new environment would gradually change its appearance, just as all plants are gradually modified by the influences of their surroundings; and that in time, after the lapse of countless years, that it would take on its present appearance and stand for what naturalists call a species, that is, a modified or differentiated form of some other form or species. And, after all, the differences which distinguish the continental Juniper from its insular descendant are not very great. The branches of the island tree have grown stouter and tougher through their long struggles against the ocean gales; the roots have learned the secret of holding on to bare rocks or of penetrating deep into their interstices. The foliage has lost its dark green tints and is now a pale blue-gray. The leaves are blunter and are furnished on the back with a gland or resin duct. The fruit is somewhat larger, and the heart-wood is not so bright a red and is rather less fragrant than that of the Red Cedar.

An interesting thing about the Bermuda Cedar is its ability to grow apparently equally well in very different situations. It flourishes on the dry porous limestone-hills and grows as freely on the brackish swamp-lands which occur in some parts of the islands. It is not unusual to find trees of a wide geographical range, and therefore subject to different climatic surroundings, which seek to adapt themselves to them by selecting situations which in one region are at the sea-level and in others are at the top of high mountains. Many conifers which grow at the north at the sea-level are found in the south only at considerable elevations above the ocean; and the Red Cedar itself, which grows at the north on high dry uplands, inhabits, in Florida, swamps which are inundated during a considerable part of the year, and in the dry climate of the western part of the continent occurs only at high elevations. But the Bermuda Cedar grows as well in one place as it does in another, although climatic conditions do not, of course, differ perceptibly in different parts of this small group of islands.

Large individuals are no longer common; the axe of the wood-cutter and the ship-builder long ago swept them away. Here and there a venerable trunk may still be found, but among the large trees still growing on the island

very few probably are much more than a century old or are large enough to possess any great commercial value. Formerly the wood was much used in ship-building; and it is interesting to note that Henry May, an English sailor, who was wrecked on the Bermuda Islands in 1593, and who afterward printed the first account of them, escaped with his companions to the banks of Newfoundland in a vessel which they were able to make from the Cedar-wood. This same wood, twenty-seven years later, furnished the material from which Admiral Sir George Somers, who the year before had been wrecked while in command of the "Sea Adventure" on the islands, constructed the vessel which carried him to the relief of the infant colony of Virginia, and in which his body was afterward borne back to his native land. Beautiful and very lasting furniture, too, was once made on the islands from the Cedar-wood, and old cedar chests and cabinets 200 years old and more are still held as heirlooms by the descendants of some old Bermuda families who still live in houses finished with this wood, which grows with age rich and dark in color like old mahogany.

Two portraits of Bermuda Cedars are printed in this issue. That on page 274 represents the stem of a very old tree standing in the Devonshire churchyard close by the ivy-covered parish church, which resembles in architecture and surroundings one of the little churches of the older Devonshire. The tree, which recalls one of those venerable Yews of England, hoary with age, and familiar inhabitants of many an English churchyard, probably led to the selection of this particular spot as a place of worship. The tree must have been a very old and large one when the little church was built; it may well have been standing when human eyes rested on these islands for the first time, and probably it has changed very little in the last 200 years. The diameter of the trunk is now fifty-nine inches, and the height of the tree is some forty feet. Only two larger specimens are now known to exist.

The second view represents the tree as it grows in the moist black soil of the Devonshire marshes, a large tract of ground covered with Cedars of large size and springing from a dense undergrowth of Wax Myrtle, or Myrica, identical with the species so common on our Atlantic seaboard, and of Baccharis, similar to, although distinct from, our sea-board species. Tall specimens of the Bermuda Palm which, next to the Juniper, is the most interesting plant of the islands, appear here and there among the Cedars, and the ground beneath the shrubs is covered with a luxuriant growth of Ferns—with the Bracken (*Pteris aquilina*) with fronds four or five feet tall, with numerous clusters of the great Marsh Fern (*Acrosticum aureum*), and with the rare and local Devonshire Marsh Fern (*Aspidium Capense*). These marshes and their inhabitants are very beautiful, more beautiful, certainly, than any other part of the islands, and as the sunlight plays through their open glades on the pale trunks of the great trees, they offer contrasts of color and afford effects of light and shade which our picture does not convey and which words cannot paint.

The Lynn Public Forest.

AN interesting sketch, published in a recent issue of the *Lynn Transcript*, contains much information relating to the early traditions and uses of the public woods which now form a unique pleasure-ground to that city. One of the things which surprise people visiting the Lynn woods for the first time is the rude stone walls which cross them from Wyoma and Saugus, extending in straight lines for many miles through swamps and over hills. They were built by the Puritan founders of Lynn to protect the live stock of the young settlement. To properly understand the motives which induced the great expenditure of time and labor needed in constructing these walls one must consider "the admirable economic system of land tenure which shaped the early towns. The church was the nucleus about which the planters grouped their dwellings. That the houses might be within a convenient distance from the church and from each other, and, at the same time, to foster that spirit of loyalty and independence which springs from the ownership of the soil, the Puritans threw away utterly the last traces of feudal holding of lands for services, and distributed home-lots in fee-simple. The Pilgrims at Plymouth tried at first a pure community of lands and of goods; the Puritans of Massachusetts Bay made no such mistake. They decreed every man's house as his castle in a truer sense than Englishmen had known in the Old World. Thus they established convenience to attend church and nearness to each other for safety, and the home became a sacred holding. The Puritans, however, tried the experiment of herding the stock of individuals upon commons held by the towns. This custom grew out of the Puritan reverence for that other chosen people—the children of Israel. Herding in common, but retaining individual ownership in the stock, besides being a labor-saving device, made the settlers neighborly. The early colonial ordinances teem with regulations concerning cattle, corn-fields, fences, tolling and banding of cattle, trespass by cattle and swine, damage to cattle by wolves. Cow-herds and shepherds and swine-herds became classes."

The long walls were built by the common labor of the men for the protection of their stock. The cow-pastures were nearest to the settlements because the cows had to be driven home twice every day to be milked. The horses were carefully watched, and the General Court as early as 1668 passed an ordinance directing the selectmen of towns to attend to their improvement. The Lynn horse-pasture was north of the present Pine Grove Cemetery, and was well watered by a never-failing spring, which flows as freely to-day as it did two hundred and fifty years ago. The pasture used by the early settlers for their oxen was beyond what is now Glen Louis Pond. Being farthest from the settlement, it was exposed to the ravages of wolves, which abounded in those days, and necessitated the construction of the wolf-pits, which still remain, a striking example to the ingenuity of the early settlers. The Puritans' dread of wolves was only second to their fear of witches, and in 1645 the General Court passed a law by which it was provided that the sum of ten shillings should be paid out of the county treasury "to any person, English or Indian, who shall kill a wolf within ten miles of any plantation."

The writer in the *Lynn Transcript* points out that the "Lynn woods have had three periods of usefulness. Down to 1706 they furnished pasturage and timber and shelter to the village. In their second period, covering the life of the town shifting from the pastoral to mechanical pursuits, they were still useful, although restricted to furnishing fuel to the inhabitants. As time went on, and cheap coal came in with the ever-advancing density of population, it seemed as if the slaughtering brick-maker and the fire-fiend would render the woods a desolation, a desert and a menace to our fair town."

But a period of greater usefulness has come. The inhabitants of cities require pure water, and the people of Lynn have wisely determined to protect and preserve the abundant supply which still flows from the springs which watered the cattle of the Puritans, and these woods now perform their noblest duty in furnishing the great city with water, oxygen and sylvan beauty for the repose of its inhabitants.

"The fathers, with their Aryan ways, their patient oxen and their demon wolves, have gone; the woods which were used first in common, then in severalty, the walls which testified to their energy, and the wolf-pits which note their skill in masonry, are being restored to the common inheritance of their children's children."

Bristol Pond Bog.

TO most people the word bog does not suggest anything very inviting. On the contrary, it is considered nothing but a miry piece of ground where no one would venture, unless obliged to, and where nothing attractive can be found. This is, no doubt, a correct impression of some bogs, but we have, in New England, bogs and swamps that are as attractive, at certain seasons, in their display of natural scenery as any of the mountain forests.

In the town of Bristol, Vermont, is what is called Bristol Pond, a small sheet of water fed by mountain brooks and springs, and from which flows a lively little creek. The pond is almost surrounded by bog lands, of which there are several hundred acres, and on the east side, bordering the bog, is Hog's Back, a large foot-hill of the Green Mountains, which extends north and south for a distance of about nine miles. The pond is about a mile long by a third or half as wide, varying, of course, at different points, and very irregular in outline. The depth of the water varies from a few inches to six or ten feet, but under this lies an unfathomed body of thin, soft, peaty mud, about as thick as porridge at its surface, but probably

thicker at lower depths. The water is quite clear when not disturbed by winds, but there is a constant bubbling in warm weather from the escaping gases of the mud.

Water-lilies flourish here in the little bays, where severe winds do not disturb them; and around the margin, where the bog often projects out over the water, may be seen fine large clumps of the Swamp Loosestrife (*Nesæa verticillata*), its gracefully drooping branches resting and rooting on the surface of the water. Not only are the rose-purple flowers of this plant attractive, but its leafy recurving stems are pretty the whole season, and, for artificial bogs or the margins of ponds and streams, planted in a peaty soil, it has no substitute. Here also may be seen, flowering in its season, the Swamp or Water Rose (*Rosa Carolina*), which grows in such localities, with various other water-loving shrubs. For quite a distance back from the margin of the pond is an open bog upon which few or no trees grow, but there are low shrubs on a part of it, while other portions have only Rushes, Sedges, Pitcher-plants, and Cotton Grass. Of the latter there are three or four species. The Twig Rush (*Cladium mariscoides*) is everywhere on this open bog, and one or two species of the Beak Rush (Rhynchospora). *Dulichium spathaceum*, another queer and striking bog Sedge, also abounds, as well as other small plants that would interest the botanist. Not far back from the margin of the pond are clumps of Arrow Arum (*Peltandra Virginica*), and, scattered all over this open space, as well as back among the timbered portions of the bog, grows very abundantly the Side-saddle Flower, or Pitcher-plant (*Sarracenia purpurea*), of which the specimens here, in the full sunlight, have beautifully variegated and colored leaves, and much darker purple flowers than those in the shade. Acres of this plant in full bloom make an attractive scene. Going back from the margin of the pond upon the open bog we find, on slightly elevated portions, now and then clumps of trees—low Tamarack, Spruce and Arbor-vitæ; and clustered about them, as if planted there for a purpose, are such shrubs as the Chokeberry (*Pyrus nigra*), Swamp Fly Honeysuckle (*Lonicera oblongifolia*), Mountain Holly (*Nemopanthes Canadensis*), the Myrtle and Hoary Willows (*Salix myrtiloides* and *S. candida*), Sweet Gale (*Myrica Gale*) and many more. Sphagnum Moss, which is not found on the wetter portions of the bog, usually grows about these trees and shrubs, and in it are such low shrubby plants as the Leather Leaf (*Cassandra calyculata*), *Andromeda polifolia* and the Pale Laurel (*Kalmia glauca*). The small Moss Cranberry (*Vaccinium Oxycoccus*) often forms, with the Sphagnum, a pretty carpet, and when covered with its abundant small white or pale pink flowers in early summer, or in autumn with its speckled fruit, is very attractive. The Large or American Cranberry (*V. macrocarpon*), though it grows here also, is nowhere so abundant. The Creeping Snowberry (*Chiogenes hispidula*), where it can find a little shade, is also abundant, and forms thick mats of its creeping stems and small dark evergreen leaves. Large overgrown clumps of the Stemless Lady's-slipper (*Cypripedium acaule*) are sometimes found here growing in the Sphagnum.

As we go farther back into the timbered portion we come among more Tamarack, Arbor-vitæ and Spruce, so that, though they do not completely cover the bog, they have hidden the pond from our view. Here in the half-open spaces, where the ground is higher, and is completely covered with moss, may be found in their seasons a wealth of flowers. *Arethusa bulbosa* is so abundant in certain localities that one might sit in the soft moss and gather a score of plants without moving. It varies in height from the little dwarf which rises an inch or two above the moss to the strong plants fifteen or twenty inches high. The Bog Shinleaf (*Pyrola rotundifolia*, var. *uliginosa*), which grows and blooms with the Arethusa, is a charming companion to it, has roundish shiny leaves and handsome purple or flesh-colored flowers. The Sarracenia and Stemless Lady's-slipper are also here, and one of the white-flowered Rein Orchis (*Habenaria dilatata*), with handsome spikes of fragrant pearly white flowers. *Calopogon pulchellus* is scattered about everywhere, as is also, though not quite so abundant, *Pogonia ophioglossoides*. Other less showy Orchids are growing in scattered groups not far away, such as *Habenaria hyperborea, H. tridenta, Listera cordata* and *Microstylis ophioglossoides*. The Bog Bean (*Menyanthes trifoliata*) is quite common in places, and the handsome racemes of its dainty white flowers are among the earliest of the bog. *Smilacina stellata* and *S. trifolia* are both common here, and add much to the floral display. The little Ram's-head Lady's-slipper (*Cypripedium arietinum*) also grows a little farther back in more favored situations; and in other places the small yellow Lady's-slipper (*Cypripedium parviflorum*) is quite abundant, and not rarely in clumps of a dozen stalks. At each step we sink ankle-deep in the cool soft Sphagnum, and as we turn back and see our footprints they reproach us as if we had ventured on sacred ground.

Walking at random, and with no definite course, through this botanical paradise, new attractions greet us at every turn. Farther back out of the locality of Sphagnum we find large patches of the Twin-flower (*Linnæa borealis*), which is one of our most attractive little vines when in flower. The Water Arum, or Wild Calla (*Calla palustris*), is also found here, and, though not abundant, the showy Lady's-slipper (*Cypripedium spectabile*) is frequently seen. Under some of the large thick clumps of Arbor-vitæ, where only a thin sifting of sunlight ever reaches it, is one of our most delicate and charming little Orchids, *Orchis rotundifolia*, with pale rose-purple flowers. Even the *Calypso borealis* is not a stranger to this bog, for it has been found here in the drier portions under the largest specimens of Arbor-vitæ. Around some portions of the bog's margin the Black Ash extends into the bog or peaty ground for some distance. Other portions are thickly covered with low trees or tall shrubs. Still others have such a dense growth of Arbor-vitæ that nothing can live under them. But in some places, where the evergreens are scattered with wide spaces of Sphagnum Moss between, may be found some sylvan scenes as rich as any our forests afford.

Botanical Garden, St. Louis, Mo. *F. H. Horsford.*

How We Renewed an Old Place.

X.—A STRUGGLE WITH THE WEB-WORM.

AMONG the difficulties of reclaiming a place, one cannot ignore the necessary hand-to-hand conflict with the various animal and vegetable enemies which lie in wait to destroy plants and trees. Eternal vigilance is the price of vegetation as well as of liberty, and the cultivator who dreams that he can for a moment take his ease in his inn, reckons without his guests of the insect-world, who take short naps, and require as much nourishment as Falstaff. I shall have more to say upon this subject at a later date, but I am now fresh from a conflict with the Web-worm, and find a treatise upon his manners and customs apropos. As an example of pertinacity, Bruce's spider beside him pales her ineffectual fires; as an evidence of the apathetic stupidity of man he is unrivaled, and as a menace of future untold horrors he may well be used to point a moral of grewsome interest.

Some philosopher has said that "the real end of the world will come when man ceases to be able to cope with the insects." When his time comes the worm is the master of us all, but there is no reason while we are yet stirring about this earthly ball that we need submit to be devoured by him before our day. And yet, when you come to think of it, that is what the brute is after. Too cowardly to attack man openly, he begins by eating up his provender. Man, being on the whole an easy-going animal, at first pays not much attention; but he only multiplies moderately, and the insect enormously. Where a man will leave a half-dozen descendants in a life-time a worm will leave one hundred and twenty-five thousand in a season; judge then if this can be allowed to go on indefinitely and man survive!

Where the inane apathy of the human being comes in is in not crushing his enemy while yet insignificant; forever penny wise and pound foolish, man tolerates a moderate evil until it becomes inordinate, and then wastes a fortune which might well have been saved, in doing ineffectual battle with his foe. It is the fable of Epimetheus forever renewed, and the appeal I would now make is to have this Pandora's box closed before the rest of the Web-worms escape to plague the world, and help make an end of the race.

It is idle to scoff at this idea as that of an alarmist. A few years ago the spring Web-worm was an unimportant factor in our orchards. The fall worm gave some trouble, but he was not impossible to cope with. Now, not only do we have to fight for every apple we possess in the autumn, but all through the months of April and May, when work presses, when every moment is precious, it takes not only all the hands on a farm to fight caterpillars, but also all the eyes of the family to detect their lurking-places; and this not as one job, but as a perpetually recurring duty for weeks at a time, and all on account of the crying neglect by land-owners of their premises, and by town authorities of the webs on their own highways, which have been allowed to accumulate, until the country roads have lost their beauty, lined as they are with trees shrouded from root to summit in ghostly webs, under which myriads of loathsome black worms writhe and crawl, and eat their fill, to the shuddering disgust of the wayfarer.

Cape of Good Hope and in certain isolated spots in Europe. The whole plant has a strong, penetrating and notably aromatic odor, and, as it acts temporarily on the nervous system and in subduing cramps, it is useful as a mild medicine and tonic.

The statue of Mr. James S. T. Stranahan, which had been placed near the main entrance of Prospect Park, was unveiled on the 6th of June. It is the work of Mr. W. Frederick M'Monnies, a young artist who was born in Brooklyn and has lived for some years in Paris, and is the gift of [illegible] scending[illegible] of Brooklyn. Statues to living men are not ofte[illegible] the exceptional honor was, in this case, well deserved, and, of course, it was fitting that Mr. Stranahan's figure should be placed where it would typify the greatest of his many services to his native town—the leading part he played in the establishment of Prospect Park.

A figure is published in the issue of the *Gardeners' Chronicle* of May 3d of a hybrid Sweet-brier Rose, with bright crimson flowers. This interesting plant was raised by Lord Penzance, and was described by him in a paper on the hybridization of species of Rose published in the eleventh volume of the *Journal of the Royal Horticultural Society*. It was raised from the Austrian Brier, fertilized with the pollen of the Sweet-brier, and is said to be intermediate between the two parents, its foliage having the fragrance of the Sweet-brier, while the flower, which is two inches across, is pale crimson, flushed on the under-surface with fawn-colored tints.

Few people know, perhaps, that any article of food is imported into this country from Egypt, but, according to the New York *Tribune*, that country sends us large quantities of onions, as many as 50,000 bushels often arriving in a single week. The onions, which are shipped from Alexandria to Liverpool, and thence to New York, are small and yellow, and not so good as those grown in this country, while they naturally deteriorate somewhat during their long voyage; but they are readily sold, because the price asked in Egypt is so low that, after adding freight charges and a duty of forty cents per bushel, a bag, containing nearly two bushels, is sold here for two dollars or two dollars and a half.

We have received a copy of the "Flora of New Bedford and the Shores of Buzzard's Bay," which is a careful revision of "A Catalogue of Plants found in New Bedford and its Vicinity," published thirty years ago. The author, E. W. Hervey, has made corrections in the nomenclature, and has added to the earlier list of plants such as have since come to his notice. An important part of this work is the "Procession of the Flowers," the object of which is to show the precise time of the year when each plant begins to flower. In this list the more conspicuous of the cultivated trees, shrubs and vines are included, and the dates will be found to answer fairly well for Massachusetts, Rhode Island and Connecticut. Inasmuch as the flowers of the same locality bloom every year with surprising regularity as to time, if we except some variations in the season of early spring flowers, one in search of a particular flower, if informed as to the time of its appearance, does not make a fruitless search by going too early or too late.

The *Vossische Zeitung* recently gave an interesting account of a gardener named Adophe Vard, living at Aubevage, near Gaillon, in Normandy, to whom a decoration had just been awarded by the French Academy. It seems that for thirty years Vard was employed as an oiler at the railway station in Vernon, and devoted himself to gardening only after he had earned the right to retire on a pension. But during many previous years he had spent his leisure hours in self-instruction to such good purpose that, without a teacher, he learned to read Greek and Latin as well as gained an intimate acquaintance with the classic writers of France. Later in life he essayed poetical composition himself. His chief work is a charming story in rhyme, called "Le Rêve de Muguette," in which the taste which turned him toward gardening is clearly evinced. Vard was too poor to publish this work, but the cost was borne by one of his friends, a neighboring inn-keeper; and it is the success of "Le Rêve de Muguette" which has brought him the purple ribbon bestowed for distinguished accomplishment in letters or the arts.

A writer in *Gartenflora* declares that if the present love for Chrysanthemums, which, almost everywhere in the north of Europe, has become almost a craze, ever spreads through the extreme south, it will prove that there is nothing that Dame Fashion cannot accomplish, for, he says, in southern Italy the Chrysanthemum is the "Flower of Death," and is rarely grown except in graveyards, or near by, for the purpose of decorating graves at the feast of All Saints. If it is seen in a garden the place is pretty sure to belong to a foreigner; no native would stick a Chrysanthemum in his button-hole, and the writer doubts whether ladies will ever fill their vases with them, and declares that he has seen an Englishwoman stared at by a wondering crowd in the streets of Naples because she was carrying an armful of these "unlucky death-flowers." At All Saints, however, the cemeteries become perfect "seas of Chrysanthemum-blossoms," other flowers seldom being mingled with them, and they are profusely planted near graves and along the bor[illegible] the cemeteries. In no part of Europe, continues the [illegible]uch could the Chrysanthemum be grown to better advantage than in southern Italy, for it is green all the year round, and blooms from July to January. It often occurs wild, even in good old varieties with double flowers, although these seem to ripen seeds only now and then, and one form is entirely naturalized—a single yellow-flowered form—which grows in a somewhat ragged way, but is well covered with pretty green leaves which retain their freshness even in times of great drought.

On Thursday evening, June 11th, the students of the College of Agriculture of Cornell University held a grand jubilee and banquet to celebrate the prosperity of the college, and in honor of the graduating class, which is the largest in the history of that department of the university. President Adams, of the university, Ex-president White, Hon. O. B. Potter, of New York, and other distinguished guests were present, and made admirable speeches on the history and aims of agricultural education. The elaborate banquet was quite unique, in that everything on the tables, except the sugar and spices, was supplied by the farm and gardens of the department of agriculture. The farm furnished a large variety of breads, meats, and dairy products; the horticultural grounds and forcing-houses, fruits and vegetables; while the conservatories of the botanical department, in addition to a splendid display of decorative plants, supplied some very beautiful specimens of tropical fruits, including bananas, oranges, lemons, and figs. In an adjoining room the various departments of the College of Agriculture had also contributed to a very attractive exhibition of implements, products and appliances for laboratory study. With strong men at the head of all its departments, the College of Agriculture now seems to be entering upon an era of great promise. Several of the highest honors of the university have this year been awarded to students of the college, and work is soon to be commenced upon a new building, which is to be equal to the best of those occupied by other departments of the university.

Walter Baker & Co., of Dorchester, Massachusetts, have issued a handsome volume, entitled "The Chocolate Plant and its Products," in which is given a full and very interesting outline of the early history of the Chocolate-plant, with a sketch of the primitive methods employed in cultivating it and in utilizing the seeds, with an account of the introduction of the beverage into Europe, to which are added a botanical description of the plant and its commercial relations, with microscopic and chemical characters of the seeds as they appear in commerce, an estimate of the value of chocolate as an article of food, with suggestions relative to the cooking of chocolate and cocoa and receipts for using it in different forms. The historical value of the publication is very much enhanced by the introduction of a number of fac-similes of engravings taken from early European works. The first of these, from a rare volume by Bontokoe, shows the Chocolate-plant bearing its large fruit from the main stem and growing under the shade of a larger tree. This is interesting, showing the fact, now generally recognized, that the Chocolate-plant can only be grown successfully in the shade was realized more than three centuries ago. Interesting, too, is the photograph of the flat mortar used by the natives of tropical America for grinding the seeds of the Chocolate. This was done by means of a roller, or short thick stone of cylindrical shape, which could be used with both hands in the same way that the common rolling-pin is used. A fact which will be surprising to most readers certainly is brought out in the history of the Chocolate-plant, that is, that chocolate was used as a beverage in Europe before either tea or coffee was employed anywhere in western Europe. The volume is avowedly an advertisement of the firm whose name appears on the title-page. As an advertisement, however, it is a model of its kind, beautifully printed and illustrated, and full of curious and interesting information which is not accessible to one person in a hundred thousand of those who use the seeds of the Chocolate-tree in some form or other nearly every day of their lives.

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